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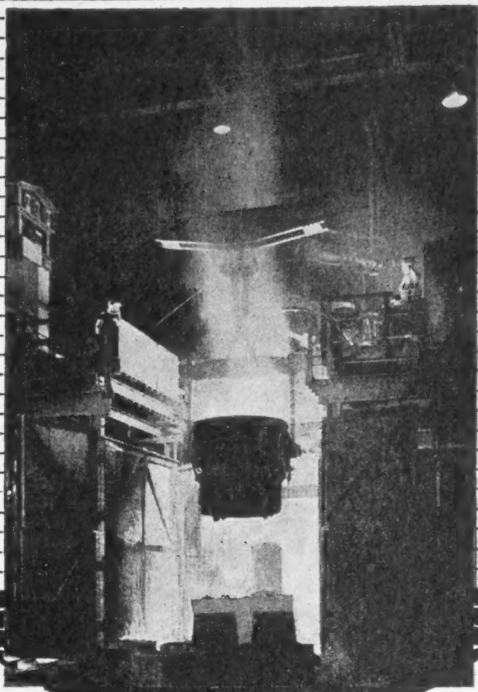
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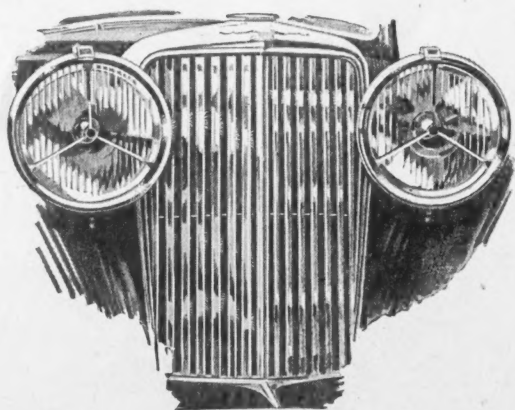
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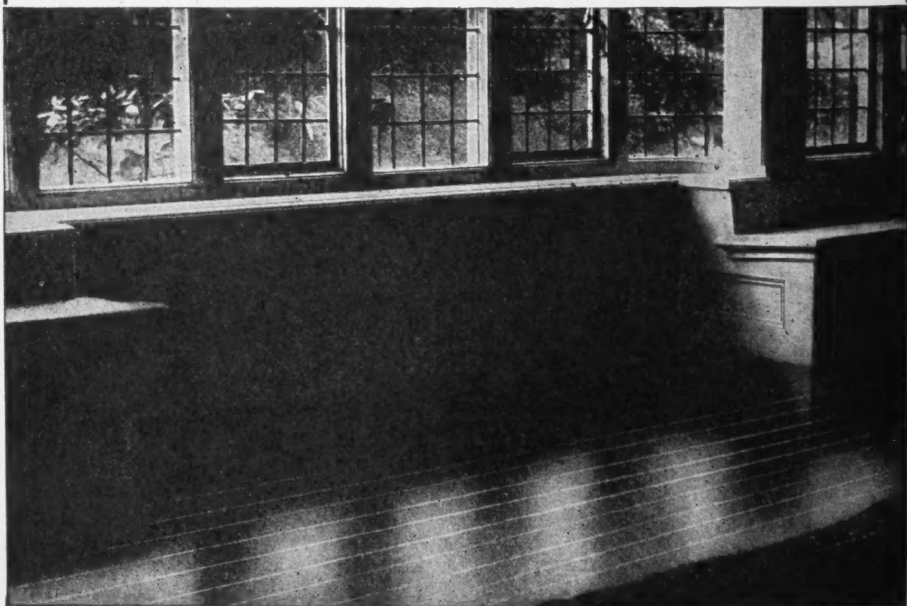
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SATURDAY, JUNE 6, 1942.



AN ENEMY STRONG POINT IN THE LIBYAN DESERT.



## A STEALTHY PRELUDE TO MAJOR EVENTS: HOW A WATCH IS KEPT IN THE DESERT ON ENEMY MOVEMENTS.

The official despatches from the Middle East frequently state that "our patrols were active," but, lacking familiarity with modern desert fighting, there are not many who realise just how our mobile units, consisting of armoured vehicles, armed trucks, and so forth, rove about the desert, spying out the movements of the enemy and frequently becoming involved in sharp encounters. Both sides have established strategic strong-points, usually in the vicinity of the wells dotted about the arid waste. Our patrols constantly penetrate ten or more miles inside enemy territory and, approaching the enemy's position in the dim light of early dawn, find some suitable depression, and there wait and watch—sometimes not more than one and a half miles from the enemy encampment. Our illustration shows three armoured cars on the watch, with

one man on the look-out for any suspicious movement by the Germans, and, in the foreground, a dark-spectacled machine-gunner watching for the appearance of hostile aircraft which may dive out of the sun. No radio communication is possible between these watchers and their base, because the enemy would pick up the signals and thus be instantly warned of their presence, so the aerials are only raised and messages sent when some important movement is afoot, at which time the moment has probably arrived for the patrol to make a "getaway." It is just such a patrol as that pictured by our artist which probably reported the opening moves in the attack launched in Libya by General Rommel last week. Only a ceaseless vigil over many months could insure the Eighth Army against a surprise attack.

DRAWN BY OUR SPECIAL ARTIST G. H. DAVIS, FROM SKETCHES BY AN OFFICER.





By ARTHUR BRYANT.

WHEN I was young, my elders and betters, including—I might say, particularly—my own parents, believed in catching their trains with plenty of time to spare. They avoided, or at any rate sought to avoid, anxiety by starting for the station about an hour before the train was scheduled to start. I say "sought to," because to my recollection there was a good deal of anxiety attached even to these leisurely antecedents to travelling. For one thing, there always seemed to be such an amount of luggage that the longer the time that elapsed between one's personal arrival at the station and the public departure of the train, the greater the probability that one or other of the score or so of packages carried would be missing by the time the long-awaited conveyance shunted backwards into the platform. Then there was the likelihood of losing one's porter; of forgetting, that is, his face and figure between one's first encounter with him at the door of the four-wheeler and the hour that he rejoined one to announce that the registered trunks and suit-cases were all in the van.

There was the momentous question, too, as to what part of the platform one would choose to await the train's coming. This had something of the fascination of a *roulette*: if one were travelling Third, for instance, it was particularly unlucky to choose a spot opposite a long array of forbidden Firsts; or if it were one of those glorious occasions when one had a First-class ticket, it was saddening to discover oneself standing all poised to spring before an equally undesirable batch of Thirds. Indeed, in those days the risks were increased because there were also Second-class tickets: in fact, I seem to remember that we often travelled with these. Sources of only moderate self-satisfaction, they have long since disappeared from our national life, and few of the younger generation can even remember them. Like Napoleon II., and that Second Reich about which the Brains Trust seemed to be so much at sea, they have been obliterated from popular memory by the greater First and Third. The ideal in those days of concentrated preparation for train-catching was to find oneself standing opposite a carriage of one's own class, next door to a luggage-van and a restaurant-car. Then one's cup of joy was full: one felt like Lord Roberts at Paardeburg or Von Moltke at Sedan: one's plans had come to perfect fruition; the trap was shut and the mouse was in it. This happened, so far as I can remember, very seldom.

I am afraid that when I grew up and became an independent traveller this early training did not stand me in good stead. I reacted from it too violently. I became a scandal to railways: a source of uproar, confusion and consternation at stations. No longer

did I spend annually days and even weeks of my life waiting on railway platforms. I used instead to arrive at the station anything from a minute to half a minute before the train left. As I approached the barrier, running swiftly, followed by an excited porter, a great cry would go up: heads would appear at the windows as a nation of sportsmen realised that a close race was being run; the guard would slightly lower his green flag and suck inwards at his already resounding whistle; the onlookers on the

by an occasional lost train than by habitually waiting five or ten minutes on the platform every time I had to travel. As for wear and tear, this was certainly considerable, but it brought incident into the humdrum life of peace and kept one's system toned up. Going to the station in London I used to crouch on the floor of the taxi, suggesting short cuts to the astonished and often indignant driver, and spurring him on at the crossings. Sometimes when the traffic blocks were bad I used almost to despair: then three

or four lucky crossings would put me in the running again. Generally, up to the last minute or quarter-minute, I did not know if I was going to make it. But in nine cases out of ten I did. It gave one a feeling of youthful triumph, of achievement, of something accomplished in the teeth of fate.

Those days are over. For one thing, I have grown older. Even if I hadn't, such a system of travel would be impossible in times like these. Nowadays, if I can by any means avoid it, I never travel at all. When I have to do so for any distance on public business, I go to the station, as my parents taught me to do in my youth, at least half an hour before the train goes, and if I can afford the time, an hour. It is a waste of time, I admit, but it is less of a waste of time than having to stand in the corridor and so do no work during a long journey. War sends one back to school again, makes one conform to the common rule, orders and disciplines one. And for all our stress on liberty, I fancy it is very good for us. It is certainly, I think, good for me.

In all this, as in so many more important things, there is, of course, a loss of freedom. We no longer mould our lives to fit some private pattern of our choosing, but for the common good. The reverse of liberty is that our own freedom may be somebody else's slavery. Even our grandfathers in the heyday of *laissez-faire* were reminded that an Englishman's right to travel on Sundays involved some other Englishman in breaking the Sabbath. The more

trains I have to choose from for my flights abroad, the more of my fellow-creatures are condemned to labour on the railways. The practice of liberty for a great nation is more intricate and difficult than any Hampden or Russell dreamed.

This is the crux of our post-war problem: the securing of liberty to the individual in a world in which no man shall be the slave of economic circumstance. It is going to be hard to achieve. We have got to steer between the Charybdis of Devil-take-the-hindmost and the Scylla of some police-ridden "ism" dear to our totalitarian neighbours and hateful to us. The apprenticeship of war is reminding us of what we shall have to sacrifice—willingly—to achieve it.



"PARTICULARS OF THE COWARDLY AND DISGRACEFUL ATTEMPT ON THE LIFE OF QUEEN VICTORIA."



"EXAMINATION OF FRANCIS BEFORE THE PRIVY COUNCIL."

ONE HUNDRED YEARS AGO: REPRODUCTIONS FROM "THE ILLUSTRATED LONDON NEWS" OF JUNE 4, 1842.

Describing the scene portrayed in the top engraving, our writer of 100 years ago says: "On her Majesty's return about ten minutes or a quarter past six o'clock down Constitution Hill . . . a young man . . . was observed to advance towards the road along which the Royal *cortège* was passing . . . and at the same instant take from his waistcoat pocket a pistol. . . . the pistol went off without injuring any person. When the young man, by name John Francis, was examined by the Privy Council [as shown in the bottom engraving] the principal Ministers present, besides the Home Secretary and Sir R. Peel, were the Duke of Wellington, Lord Stanley, the Lord Chancellor, the Earl of Haddington, the Earl of Jersey" and others. The warrant of commitment charged "John Francis with shooting at our Sovereign Lady Victoria the Queen, with a pistol loaded with powder and ball."

platform would clear the course. Often I would run for some yards a level race with the departing train before gathering myself and my traps for a spring and boarding it, as it were, in full air; at others the train would beat me, or some officious porter, judging my neck in danger, would collar me like a three-quarters and prevent me from attaining my evanescent goal. At others I would miss the train altogether and survey, panting before the barrier, only an empty bay. Those of my friends who witnessed this frequently repeated performance often asked me why I persisted in running railway travel so fine, instancing the wear and tear on my nerves and the risk of missing connections as reasons for mending my ways. But I used to find that on the whole I lost less time



## ANTI-TANK MINES: A DEADLY DEFENSIVE WEAPON IN MECHANISED WARFARE.

DRAWN BY OUR SPECIAL ARTIST G. H. DAVIS.



TYPES OF BRITISH AND GERMAN LAND-MINES—A DESERT MINEFIELD BEING LAID, AND IN OPERATION.

Minefields play an increasingly important part in land warfare, as just demonstrated in Libya, which has even been termed the "Battle of the Gaps," because of the breaches General Rommel tore in our minefields at heavy expense. With the development of the tank, the tank-mine became an inevitable development against these mobile land forts, and is probably most important of all defensive weapons against the tank. A minefield is laid in such a way that a tank cannot pass over a field without exploding one or more mines, and these are capable of smashing the track, bogie wheels, suspensions and axles of the heaviest tank. The method employed is to make a "hard" bed for the mine, remove the safety-cap from the

detonator and lightly cover it. The fields are very carefully charted, as with sea-mines, and when a minefield is laid near a well-used track, the "road" through is marked by tapes and pegs, as shown above, these being, of course, withdrawn when an attack is apprehended. In laying or removing mines near an enemy position the work is carried out at night and is a dangerous job for the skilled Sappers employed on it. There are various secret devices used in detecting the position, like the Russian-type detector above, so constructed that when passed over hidden metal it detects the mine's position. Our artist's drawings give a comprehensive picture of mines, a tank minefield being laid, and in operation.



## 1000 BOMBERS: A PANORAMA SHOWING THE BOMBER FORCE

DRAWN BY OUR SPECIAL



THE ILLUSTRATION ABOVE ENABLES ONE TO REALISE THE IMMENSITY OF THE FORCE WHICH,

The Air Ministry report immediately following the night of Saturday, May 30, 1942, is likely to be historic; it said: "A force of considerably over 1000 bombers attacked targets in the Ruhr and Rhineland. Cologne was the main objective . . . preliminary reports of the crews indicate that the attack was an outstanding success. By dawn the fires and smoke were visible from the coast-line of Holland; a reconnaissance early on Sunday morning reported a pall of

smoke rising to 15,000 ft. over the target." The report goes on to mention the fact that this mighty air operation included attacks by other Bomber Command 'planes—working with aircraft of Fighter, Coastal and Army Co-operation Commands—on enemy aerodromes and enemy fighters which attempted to intercept. In order to obtain an idea of the magnitude of this first four-figure raid, it may well be recalled that in the heaviest German raids over Great Britain in 1940



## WHICH HAS SMASHED RHINELAND AND WESTERN GERMANY.

ARTIST G. H. DAVIS.



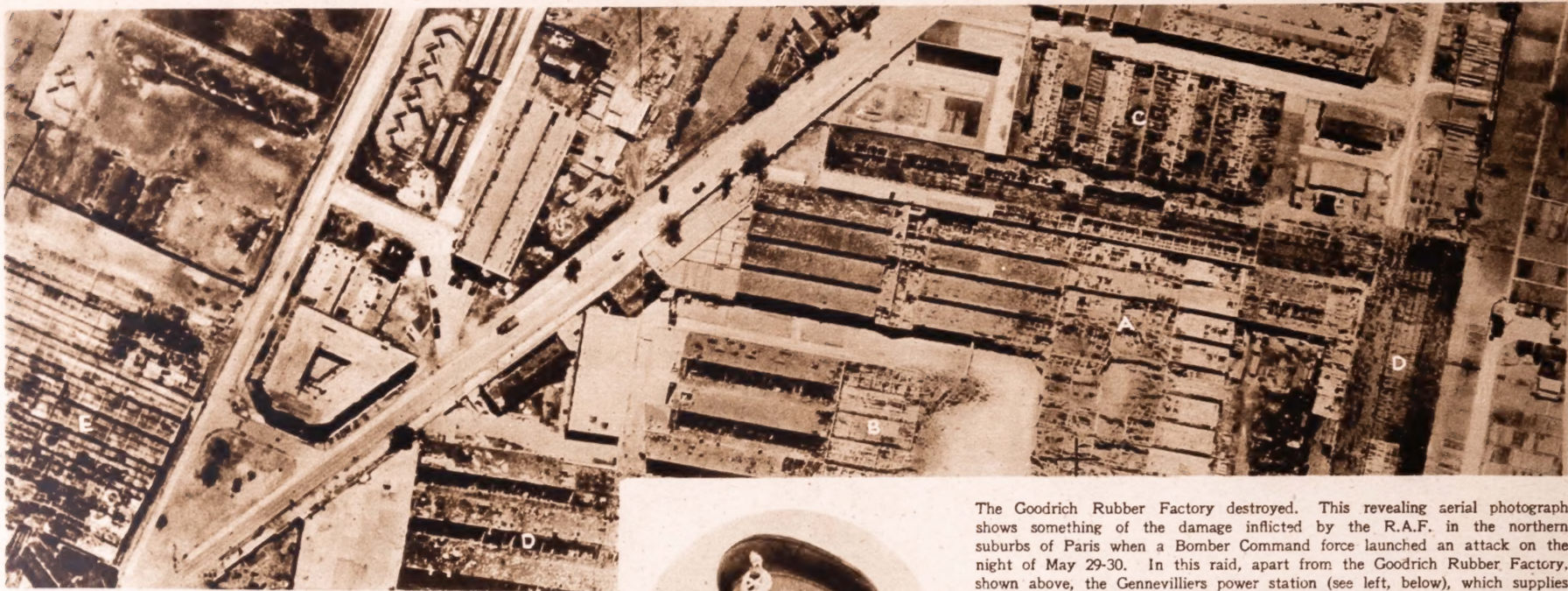
RELAYS OF TEN BOMBERS PER MINUTE, BOMBED THE RUHR ON MAY 30, AND ESSEN ON JUNE 1.

and 1941, never more than six hundred aeroplanes were used and the bomb-loads they carried were far less than those carried by the giant British bombers attacking the Ruhr. Air Marshal Harris, C-in-C. Bomber Command, received a congratulatory telegram from the Prime Minister, in which Mr. Churchill referred to "the remarkable feat of organisation which enabled you to dispatch over 1000 bombers to the Cologne area in a single night, and without confusion

to concentrate their action over the target into so short a time as one hour and a half." One thousand planes, one target and ten bombers a minute attacking it! In 90 minutes over 2000 tons of bombs had been unloaded. Here was terrible proof of the growing might of the Royal Air Force. "This proof," in the words of the Prime Minister, "of the growing power of the British bomber force is also herald of what Germany will receive, city by city, from now on."



# R.A.F. OVER PARIS—COLOGNE AND BOMBED CANTERBURY—LIBYA GENERALS.



THE EXTENSIVE DAMAGE INFLECTED ON THE GOODRICH RUBBER TYRE WORKS, NEAR PARIS, DURING THE HEAVY R.A.F. RAID ON THE NIGHT OF MAY 29-30: A. DESTRUCTION CAUSED BY HEAVY BOMBS. B. AN AREA OF 1700 SQUARE YARDS HEAVILY DAMAGED—TO THE RIGHT IS ANOTHER DEMOLISHED AREA. C. DAMAGE FROM BLAST OF HEAVY BOMBS. E. DAMAGE CAUSED IN PREVIOUS RAID.



LIEUT.-GEN. WILLOUGHBY NORRIE.

The second commander of Britain's tanks in Libya, General Norrie, was in the 10th Hussars, and when the regiment was mechanised he threw all his energies into tanks. Several times during the last Libyan campaign he should have been captured, but he always managed to wriggle out. He is very proud of the success of the many raids carried out by the S. African armoured cars in his corps.



LIEUT.-GEN. W. H. GOTT.

General Gott, one of the two tank commanders in Libya under General Ritchie, is known as "Strafer" Gott in the Middle East. Although new to tank warfare, having been in India before the war and then a general staff officer, he has proved a great tank general, and General Auchinleck is said to have remarked that "the main weight of this campaign will fall on 'Strafer's' broad back."

The Goodrich Rubber Factory destroyed. This revealing aerial photograph shows something of the damage inflicted by the R.A.F. in the northern suburbs of Paris when a Bomber Command force launched an attack on the night of May 29-30. In this raid, apart from the Goodrich Rubber Factory, shown above, the Gennevilliers power station (see left, below), which supplies power to the whole of the north-western Paris industrial area, was destroyed, and the Gnome-Rhone aero engine factory—believed to be making engines for the German Focke-Wulf "190" fighter 'planes—was hit for the third time since April 5. After the raid Laval paid the area a visit and saw—to use his own words—"the widespread devastation caused by this new brutal aggression which has struck at the civil population."



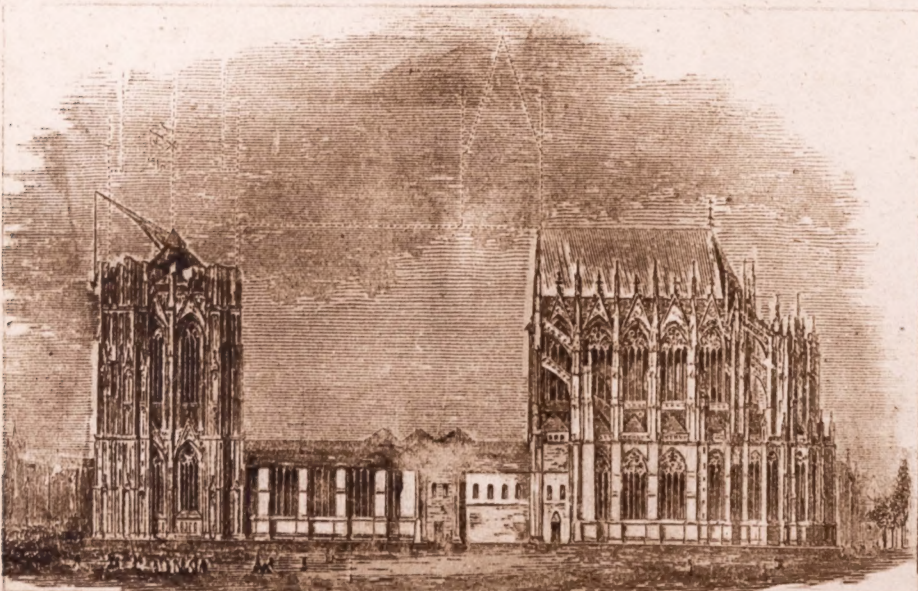
THE GENNEVILLIERS POWER STATION, WHICH SUPPLIED POWER TO FACTORIES IN THE NORTH-WEST INDUSTRIAL AREA OF PARIS.

Our picture shows this important target as it appeared after the latest R.A.F. raid on the industrial suburbs of Paris. The figures indicate: A. The boiler-house area. A1. Direct hits caused this damage. A2. The stump of a "blitzed" boiler-house chimney; its top (A3) now rests in an upright position. These chimneys are constructed of thick steel. B. The generating house—indicated by the dotted line—which has sustained very heavy damage.



CANTERBURY: A TARGET FOR ANOTHER "REPRISAL" RAID, SUPPOSEDLY IN REVENGE FOR OUR COLOSSAL ATTACK ON COLOGNE.

Following the R.A.F.'s greatest raid of the war, when over 1000 'planes attacked Cologne, Canterbury suffered a sharp attack, during which damage was done to shopping and residential areas. About 25 German bombers attacked the beautiful old Cathedral city, and among those killed was the Town Clerk. The Archbishop and Mrs. Temple were in residence at the time, but both are safe. The Archbishop made a tour of the city afterwards and inspected the damage.



COLOGNE CATHEDRAL IN 1843: THE SOUTH SIDE, SHOWING UNCOMPLETED TOWERS AND NAVE, PUBLISHED IN "THE ILLUSTRATED LONDON NEWS" OF MAY 27, 1843.

Cologne Cathedral, which was carefully left unscathed by our Armada in the great raid of May 30, is one of the most noble of Gothic edifices. Yet, as the reproduction of a drawing in "The Illustrated London News" of May 27, 1843, shows, it was then very incomplete. The edifice was begun in 1248, the choir consecrated in 1322, but the South Tower, shown in the engraving, had only been taken to that height a hundred years later. In 1843, we are told, the North Tower was not



COLOGNE CATHEDRAL TO-DAY: ALTHOUGH 1130 R.A.F. BOMBERS RAIDED THE CITY, AND THE MAIN RAILWAY STATION ADJOINS THE CATHEDRAL, IT WAS UNSCATHED.

even then more than twenty feet above ground. The steeples are not over seventy years old. In the early nineteenth century the edifice was in a deplorable condition, owing to the wars with France, whose soldiers used the Cathedral as a stable. Cologne is far later than Canterbury, which the Germans deliberately bombed as a "reprisal," for there was a basilica there in 597, and the present Cathedral was begun in 1070.



## THE MAKING OF A "HALIFAX" BOMBER: KEY STAGES IN PRODUCTION.



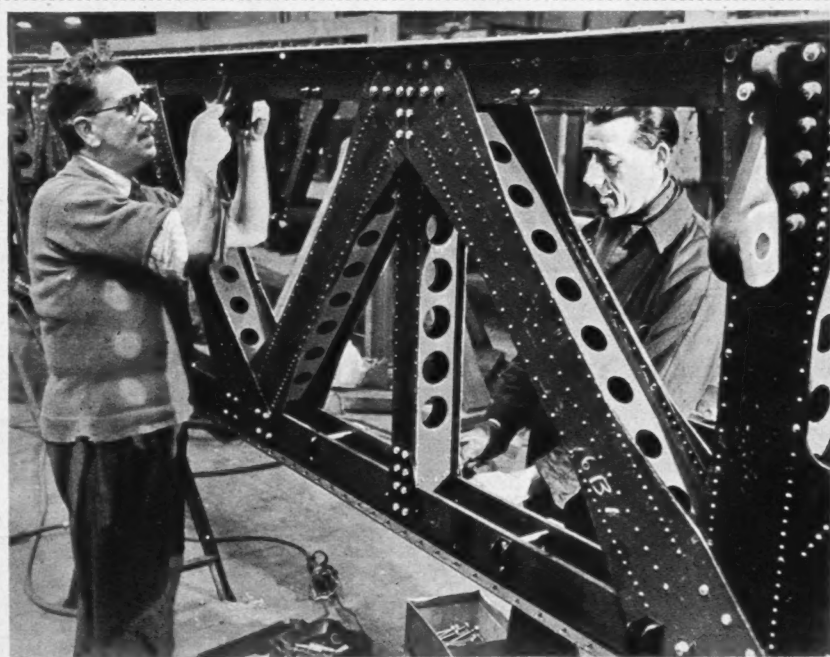
1. THE DRAWING-BOARD, WHERE FIRST A NEW AEROPLANE TAKES FORM. H. R. HAYNES, NEW DESIGNS ENGINEER, AT WORK.



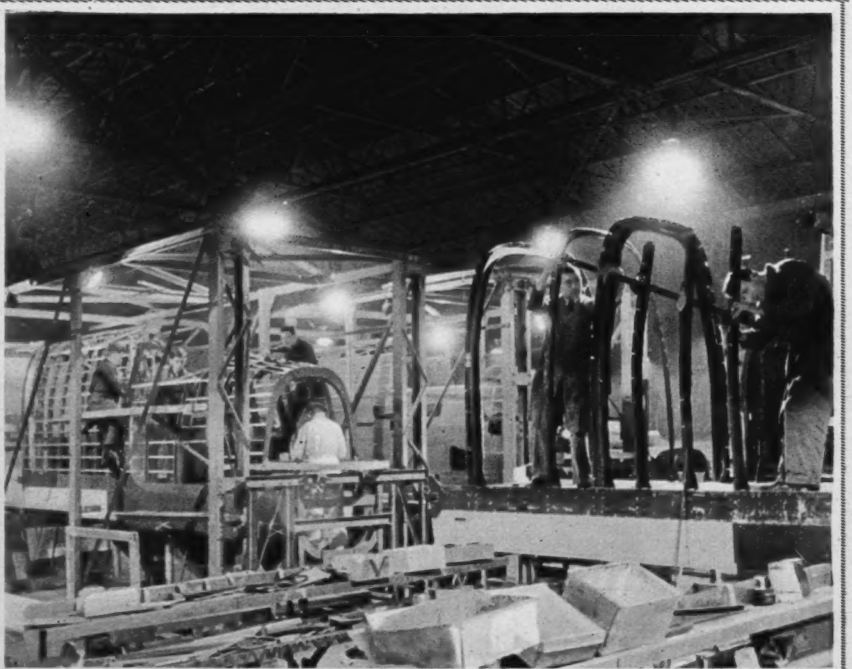
2. BLUE-PRINTS ARE THEN MADE FROM THE ORIGINAL DRAWINGS. THIS IS THE LIBRARY OF THE DRAWING OFFICE, WHICH RELEASES 4000 PRINTS A DAY.



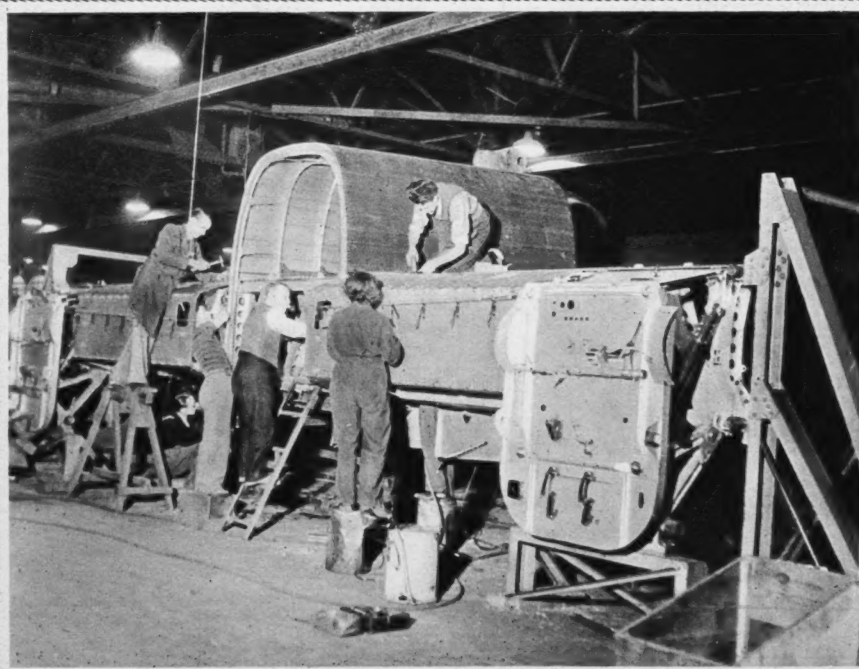
3. TEMPLATES: GIRL WORKERS DRILLING THESE METAL PATTERNS, FROM WHICH SCORES OF REPLICAS ARE MADE IN DURALUMIN.



4. A WING BEGINS TO TAKE SHAPE. THIS IS THE FRONT WING SPAR BEING LINKED BY GIRDERS TO A SECOND SPAR.



5. ON THE RIGHT THE FRONT PART OF THE FUSELAGE IS READY FOR THE ASSEMBLY JIG. (LEFT) A FRONT FUSELAGE ALREADY IN THE JIG.



6. THE "HEAD AND SHOULDERS" OF THE AIRCRAFT TAKING SHAPE. RIGHT AND LEFT ARE THE TWO BULKHEADS WHICH WILL RECEIVE THE ENGINES.

"From the beginning the aeroplane was right and no major modifications were needed. Production had begun before the two prototypes were finished, and the first production machine flew on October 11, 1940." The quotation is from an article in the "Aeroplane" dealing at considerable length with the already-famous Handley-Page four-engined "Halifax" bomber. This notable aircraft carries a heavier bomb-load over a greater distance than any other aeroplane in the

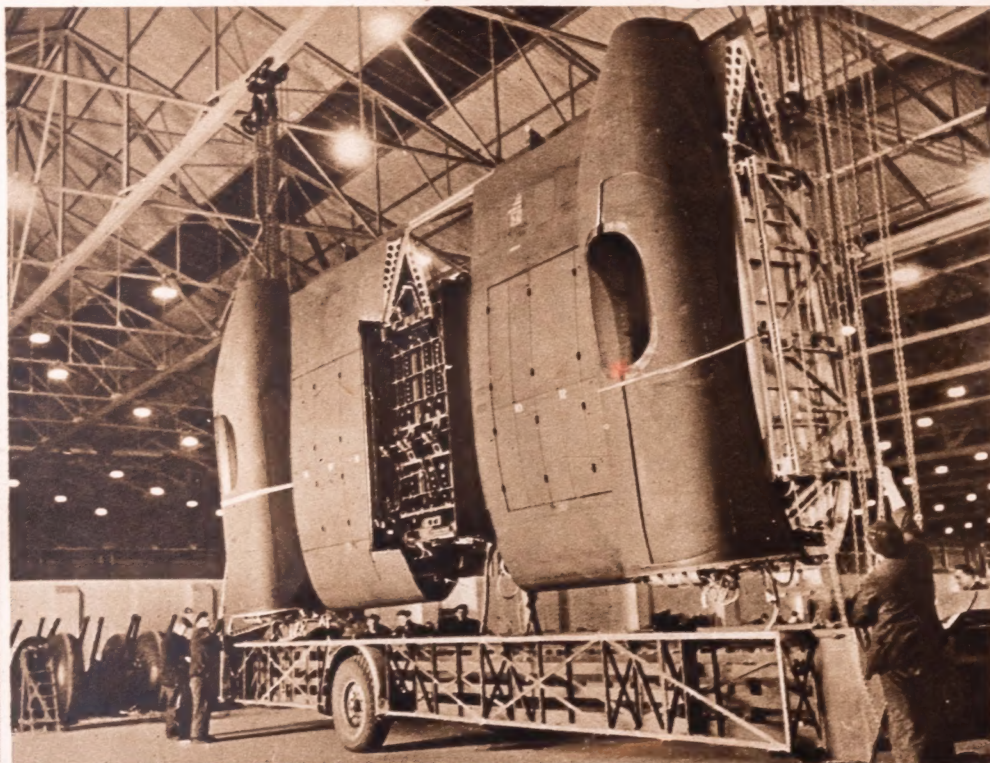
world on active service to-day. Our pictures on this and the following pages illustrate certain stages in the construction of these mighty bombers, and it is a point of especial interest that the "Halifax" designers from the very beginning took into most careful consideration not only the design of the craft but its ease and speed of production. To quote the "Aeroplane" again: "From the production viewpoint perhaps the most interesting feature about the 'Halifax' is the

[Continued overleaf (page 653).]

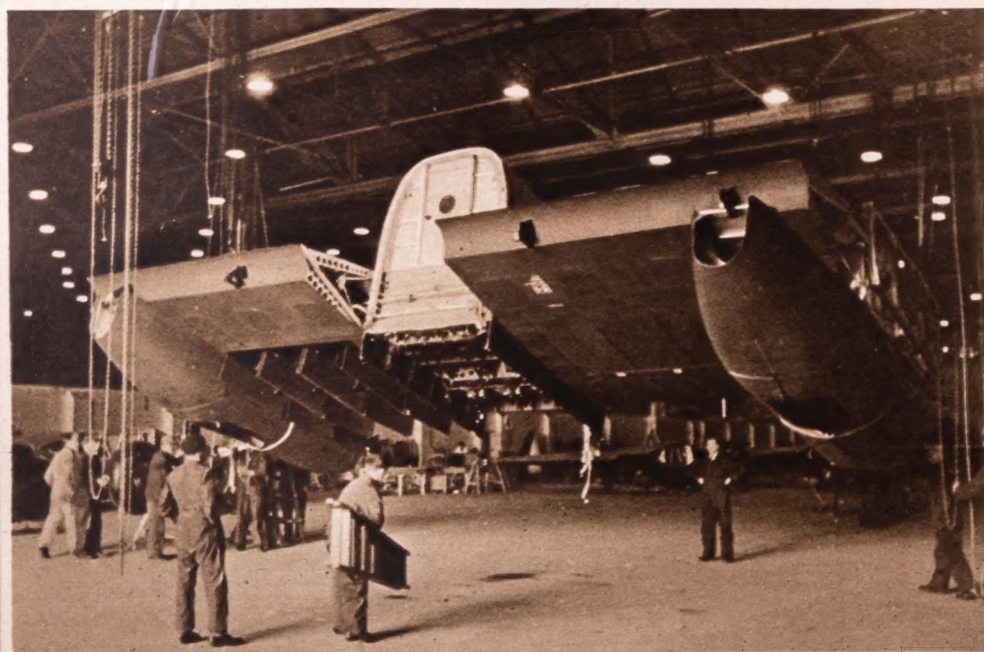




7. ONE OF THE EARLY STAGES IN THE FITTING OF FUSELAGES WITH THE INNUMERABLE INSTRUMENTS, WIRES AND SO FORTH WHICH ARE ESSENTIAL TO MODERN AIRCRAFT.



11. THE HUGE CENTRE SECTION ARRIVES AT THE ASSEMBLY STATION. ON EITHER SIDE ARE THE AS YET EMPTY NACELLES OF THE INNER PORT AND STARBOARD ENGINES.



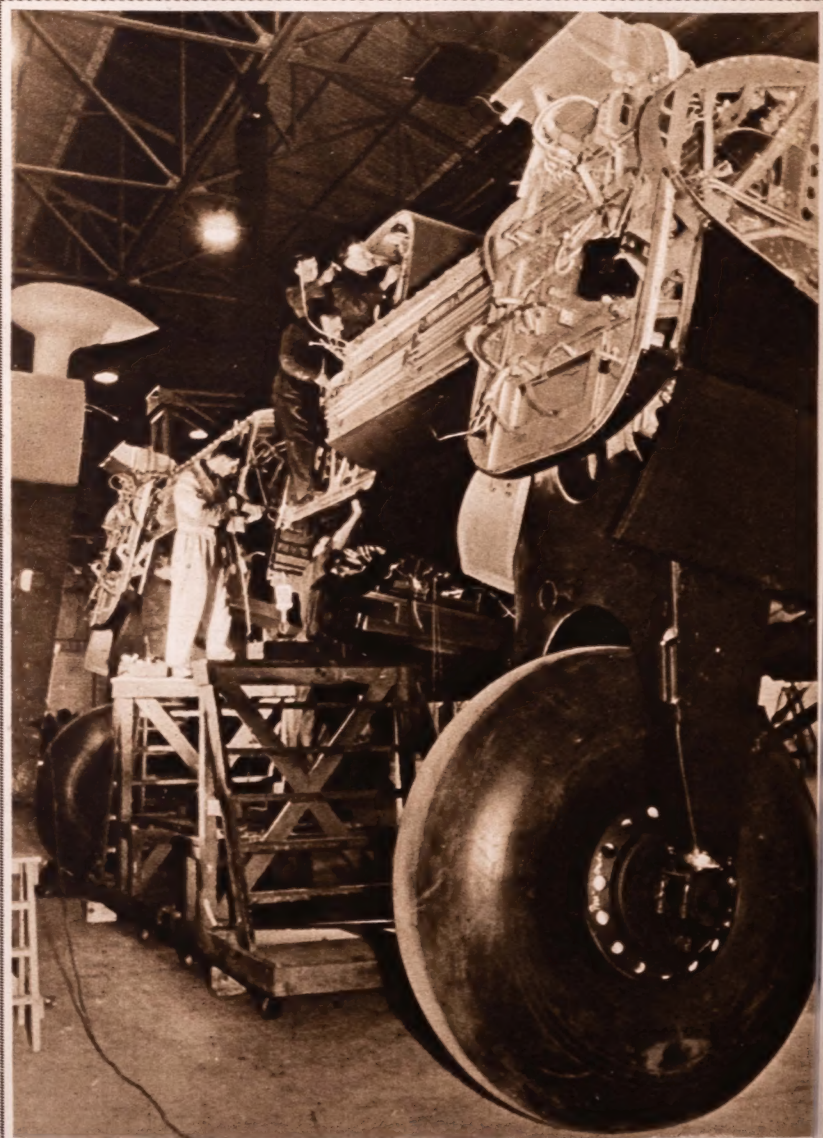
12. ANOTHER VIEW OF THE CENTRE SECTION OF A "HALIFAX," SHOWING IT BEING PLACED IN POSITION FOR THE FITMENT OF OTHER SECTIONS, ENGINES AND UNDERCARRIAGE.

*Continued.* assemblies is divided into sub-assemblies, so that construction is divided up among the largest possible number of operatives. The wing, for instance, is built up in five parts: the centre section—as two of our pictures show—carries the mountings for two of the engines, and is assembled with the centre section of the fuselage. Later the undercarriage units are fitted. The outer portions of the wings are divided

## THE MAKING OF A "HALIFAX": SIMPLIFIES AND



8. FITTING A COMPASS MOUNTING BRACKET IN THE REAR FUSELAGE. THE MUNITION RACKS ARE NEARING COMPLETION, AS IS THE WIRING SYSTEM.



13. THE UNDERCARRIAGE, WITH ITS GIANT WHEELS, IS NOW IN PLACE. THE BULKHEADS ARE NEARLY READY TO RECEIVE THE ENGINES.

into two sections. The fuselage is sub-divided into four main assemblies, of which the nose section is the most complex, including as it does accommodation for members of the crew, the front electrically-operated gun turret, bomb-aiming and navigational positions, and places for the pilot and radio operator, both of whom are in charge of numerous delicate and complicated controls. The tail unit, including its twin



## HOW THE SPLIT-ASSEMBLY SYSTEM SPEEDS PRODUCTION.

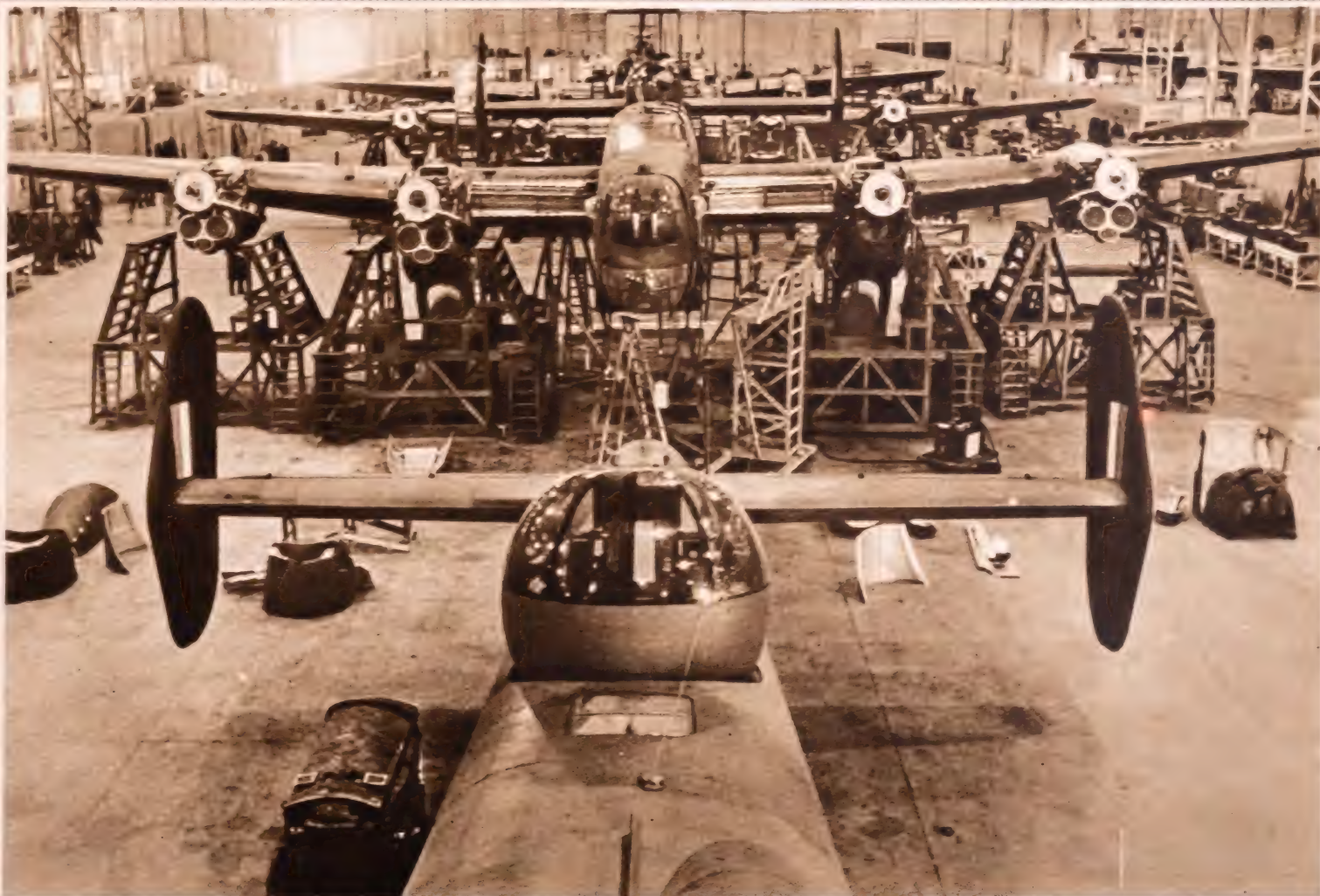


9. THE NOSE OF THE AIRCRAFT HAS COME OFF THE JIG. THE AIR-SPEED INDICATOR AND ELECTRICAL EQUIPMENT HAVE YET TO BE FITTED.



10. ROLLS-ROYCE ENGINES FOR FITMENT TO "HALIFAXES." EACH DEVELOPS 1200 H.P., AND THE "HALIFAX" IS A FOUR-ENGINE MACHINE.

*Continued from page 651*  
system of split assembly on which it is built. The system was developed first for the 'Harrow' in 1936 and then for the 'Hampden' in 1938. It has two great virtues. First it divides the aeroplane into convenient pieces for transport and repair, and secondly, it makes possible the employment of more people on each stage of the job, and hence speeds output. In all there are some twenty-four major assemblies, and they are put together and the machine test-flown in an extraordinarily short time after they have been completed." The writer goes on to explain how each of the main  
*[Continued below on left.]*



14. A GENERAL VIEW OF THE ASSEMBLY SHED. WINGS, NOSE, ENGINES AND TAIL ARE ALL IN POSITION. THE AEROPLANES ARE RAPIDLY APPROACHING COMPLETION AND THEIR FIRST FLIGHT.



15. THE GIANT BOMBER IS COMPLETED AND THOSE STANDING BENEATH THE WINGS EMPHASISE ITS GREAT SIZE. IT HAS A WING-SPAN OF 98 FT. 10 INS. AND IT IS 70 FT. LONG. THE "HALIFAX" CARRIES A CREW OF SEVEN; ITS BOMB-LOAD IS "VERY HEAVY."

fin and rudders, is of cantilever construction; it is built up separately and dropped into position on the tail assembly. It is interesting to recall that it was the Handley-Page Company who built their first heavy bomber in response to an Admiralty specification in 1914, since which time the firm has played a leading part in the development of heavy bomber aircraft. The first service bomber built weighed

8000 lb.; the "Halifax" weighs 60,000 lb.! As to size, it has a wing-span of 98 ft. 10 ins., and a length of 70 ft. 1 in. Driven by four Rolls-Royce "Merlin" engines, each developing 1200 h.p., the machine—for its size—is very fast, and is stated to carry a "very heavy" bomb-load. "Halifax" squadrons have been on operational service since the end of 1940, and their numbers are steadily increasing.



A GREAT battle is raging in the Ukraine. In Cyrenaica there is sharp fighting on a very much smaller scale. The former has continued for weeks without intermission, though as these lines are written it has not produced a final decision, whereas the latter is in its early stages. So far no close connection has been established between these distant campaigns, except in the air, in which element the Germans can readily switch forces fairly rapidly to and fro across the Mediterranean. We can at least be sure that if the Axis forces were not now taking the offensive in North Africa there would be a still more powerful section of the *Luftwaffe* present in South Russia. So this North African offensive may be to a large extent independent, with its own special ends in view; it may be partly designed to keep us as active as possible in that theatre and drain our resources as far as possible in order to insure against the opening of a new front in the West; and it may be part of a very much larger pattern, which will presently develop. It is obvious, at all events, that the enemy sets great store by it. Otherwise he would not have devoted such tremendous energy and endured such heavy losses in his long and continuous air offensive against Malta, which was intended to facilitate the passage of his convoys to Libya and perhaps to knock out Malta as a base altogether. That again may perhaps be a pointer to the larger pattern.

Marshal Timoshenko's offensive on either side of Kharkov gained great initial success, and whatever the final result of the campaign, it is likely to have upset the German plans to a considerable extent. It has also inflicted upon the enemy heavy losses in men and material. The front rapidly assumed three curves: a Russian salient north of Kharkov; a German salient, created by the fact that the enemy clung to, or gave way but slowly in, the strong outer defences of the city; and another salient, the biggest of the three, south of Kharkov. We may not have been able to plot these curves accurately on our maps, because there was no detailed information from either side, but as it was generally drawn, the southern salient looked very dangerous. Behind it ran the wide Donetz, doubtless now very full of water, with a westward bend which corresponds roughly to the shape of the salient itself. It was at once obvious that if a big counter-thrust could be driven in from the south in the direction of this river bend it would create a very awkward situation for the Russians. If it could be co-ordinated with a southward thrust from the area about Kharkov still in German hands it would result in envelopment of the whole sack; but this southward thrust was much less likely to be dangerous, because the



TIMOSHENKO'S APPROXIMATE POSITION ON MAY 26-31, WHEN OFFENSIVE AND COUNTER-OFFENSIVE WERE HALTED. LOSSES ON BOTH SIDES WERE HEAVY. MOSCOW CLAIMED 100,000 GERMAN LOSSES, WITH MUCH EQUIPMENT.

Marshal Timoshenko's advance along the Kharkov front and Von Bock's counter-offensive reached at least a lull on May 31, after a titanic battle of eighteen days, with heavy losses in men and material on both sides. The most severe fighting took place in the Izium-Barvenkovo sector, where Von Bock endeavoured to drive a wedge into the Soviet bulge, and made fantastic claims. The object of Timoshenko's attacks was stated in Moscow to disrupt the German plans for a drive in the Caucasus, by hitting at the machine with full force, and it is believed to have succeeded. (Copyright map, "The Times.")

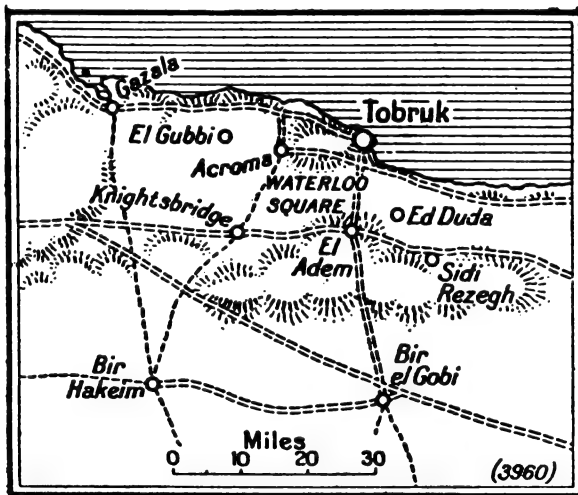
Germans were sure to have their hands full in their salient east of Kharkov. Of course, the area was very large and the German armoured columns had a long way to go before they could isolate the Russian forces west of the Donetz, but it was just the sort of operation they were likely to attempt. It could also be guaranteed that they would put a great deal of weight into it, especially when they had at their disposal most of the air strength which they had previously been employing in the Crimea.

Field-Marshal von Bock duly struck, and struck hard. He met with fierce and stubborn resistance, and German commentators have gone out of their way to declare that the fighting quality of the Russian soldier was found to be even better than last year. Then the Russians struck back at his wedge, and Moscow reports claimed that they had lopped off its thin end. Attack and counter-attack continued. Meanwhile, the battle on the original Kharkov front became practically motionless for something like a fortnight, though there were later reports of further forward moves on the part of the Russians. What has happened in the southern bulge defies analysis. One great

## THE GREAT WORLD WAR: THE CAMPAIGNS IN RUSSIA AND LIBYA.

By CYRIL FALLS.

change between this war and the last is the deterioration in the value and reliability of official reports. Twenty-five years ago the combatants naturally made the best case they could and slurred over their own setbacks, while often exaggerating their own successes. But to-day reports frequently contradict one another so flatly and in such important respects as to be wholly irreconcilable. In this case the Germans have claimed complete victory in the



ROMMEL'S NEW LIBYAN OFFENSIVE: A MAP OF THE AREA OF THE BIG TANK BATTLE WHICH CENTRED IN THE "KNIGHTSBRIDGE" SECTOR AND SOUTH OF ACROMA.

After five days of severe fighting in the region of "Waterloo Square" and "Knightsbridge," south of Tobruk, or between Acroma and El Adem, General Rommel had failed to get near Tobruk or to scatter our defences. The growing danger to Rommel's forces were his supply lines, which were being continually bombed. An enemy advance northward as far as Acroma into the coastal plain was withdrawn on May 30. (Copyright map, "The Times.")

bulge. They have asserted that the battle has ended and that all that remains is the mopping-up of a few outstanding centres of resistance. They pretend to have counted vast numbers of prisoners and huge quantities of booty. The Russians deny these claims completely. They say that the fighting is still going on at its height, that many of their counter-attacks have achieved success, and that the German figures are fantastic propaganda.

What is one to make of these conflicting claims, which present pictures so different that they might not refer to the same events or even to the same battlefield? My own guess is that the Germans did gain a considerable success in their counter-offensive, but that they grossly exaggerated it. It is possible that they pocketed part of the Russian forces in the southern part of the salient without really cutting off the whole salient. It is also possible that some of their tanks did actually at one moment complete the circle, but a circle completed by tanks does not necessarily mean encirclement. The whole truth will not be laid bare for some time to come, and may indeed be left for post-war history to establish, as the history of the battle of Viasma-Bryansk has been. At least the first major offensive launched against German forces in Europe has much to set on its credit side, and may have more than we know. If Russian resources are not too deeply committed to this one venture, now would seem to be the moment for the Red Army to strike at some other point. If it can possibly keep the initiative in its hands this summer it need have no fear of the final result. It has evidently lost nothing of its resolution and has gained in skill, though it has not yet acquired the capacity to deal a blow quite as violent as the Germans can produce or to keep up the momentum as they do. Probably the chain of command on the German side and the methods of communication from which its links are forged are still nearer to perfection than those of the Russians, but there is no inferiority in the equipment of our Allies, any more than in their bravery and resolution. If we—and perhaps they also—hoped for more from the battle of Kharkov, let us recall how improbable such events as those which are now taking place would have appeared in October last.

In Cyrenaica the Axis armoured forces outflanked the British left in the desert near Bir Hakeim, swung round it, and turned northward in the direction of Tobruk. Whatever the enemy's object this time, it was always safe to suppose that he would never, in the event of an offensive, repeat his last mistake about Tobruk, but would attack it with might and main. Wherever the hostile columns launched assaults on defended localities, at Bir Hakeim, and later at El Adem—which may be presumed to be in our second system of defence—they were repulsed with loss. Nor was their progress in the first stages of a nature to arouse serious anxiety, though naturally we should have preferred to hear that our tanks had taken them in flank and thoroughly defeated them at an earlier stage. The curious thing about these tank battles is that they are by no means annihilating, as theoretically one would have expected them to be. Rather do they seem to resolve themselves into a long series of brief engagements, with intervals for refuelling and repairs. Mechanisation has to a great extent mastered the desert, but the desert still limits the number of troops who can live and fight in it by one factor, that of water. That is the real key to the peculiarities of desert warfare, when sand, heat, absence of roads and lack of any resources in the form of food have

almost ceased to count. Scantiness of numbers relatively to the area in which fighting may take place, taken in conjunction with an almost complete absence of natural military obstacles, give fluidity to all the campaigns in Libya fought or likely to be fought. They also make evasion of action relatively easy on the part of highly mobile forces and the breaking-off of an action seldom impossible.

To discuss so far in advance of publication the tactical details or the likely developments of a battle only in its opening stages would be fruitless. It will be of more profit to consider the significance of the Axis offensive. It may be connected with various other matters, such as the Italian demands for the surrender of Corsica and Tunisia. But it has one significance about which there need be no speculation. I remarked at the beginning of this article that there was no close connection except that of the air between it and the campaign in Russia. Yet there is a subtle indirect connection. No phase or theatre of the war can to-day be unaffected by the situation of the opposing tides with regard to the Sicilian Channel or even with regard to the humped shore of Cyrenaica, which again narrows the Mediterranean towards Crete. Were the whole province firmly in our possession our burdens and risks would already be greatly lightened. And whichever side succeeded in establishing itself on the southern shore of the Sicilian Channel, in that French territory which may for the moment be described as neutral, but which it is strongly suspected Laval may intend to hand over to the Axis, would gain a very large advantage. Were the Mediterranean again open to our convoys we should not only have another supply route to Russia but also the means to build up the front Syria-Iraq-Iran with an immense economy in shipping. In this sense all operations in North Africa must be connected with Russia.

The Axis forces have had a good period in the matter of trans-Mediterranean convoys, and there is no secret that their strength has been made up and that they have received plenty of the best material and large supplies of petrol. They can reinforce much more quickly than we can, but we have in Egypt much the better base and across the Western Desert of Egypt considerably the better communications. The German High Command is aware that some new phase in the struggle might prove unfavourable to this traffic across the Mediterranean on which the forces in Libya entirely depend and that we could in any case eventually build up a force greater than it could maintain—in fact, that we should have done so already and almost certainly run them right out of North Africa had it not been for the demands of Russia and the Far East upon our resources. It may well be that the enemy has on this occasion launched his first offensive—the others have been counter-offensives—because he did not want us to strike first. Yet it is not certain that the initiative is of very great value in this country, where the spearhead of an offensive is apt to become blunted and ineffective so rapidly. General Auchinleck may be well content on this occasion to experiment with the method of smiting the outstretched arm rather than stretch out his own. Yet there remains one factor which must cause uneasiness. Last time we came out of the campaign with a very large balance of profit on our side—in fact, the last campaign may be said to have been victorious—but we missed by a little an overwhelming victory. And the chief cause was the lack of tank and anti-tank gun-power. Whatever may be the respective advantages of attack and defence in Libya, whether or not the initiative represents as high a trump there as elsewhere, the side which can knock out its opponents' tanks while holding its own out of range of anything but field artillery is obviously in possession of a long start. It is fervently to be hoped that we shall not be handicapped in such a matter this time. If we are not, then I think we ought to win.



THE JAPANESE ADVANCE IN CHEKIANG, EASTERN CHINA: A MAP SHOWING KINHWA, FROM WHICH THE CHINESE RETIRED ON MAY 30, AFTER THE ENEMY USED POISON-GAS.

After a lull of many months in Eastern China, the Japs have begun a new offensive in Chekiang Province, which would seem to synchronise with their attack in Yunnan on the south, the object being to threaten Chungking by a pincer movement. On May 31, our Allies admitted withdrawal from Kinhwa after bitter street fighting, in which the enemy used gas. In the Nanchang area the Japs began a thrust to link up with their forces in Chekiang. Their losses are reported to have been heavy, and the use of gas shows their desperate eagerness to advance at any risk. (Copyright map, "The Times.")





AIR MARSHAL A. T. HARRIS, COMMANDER-IN-CHIEF BOMBER COMMAND.  
(Portrait by Howard Coster.)

## "CITY BY CITY": THE C-IN-C. BOMBER COMMAND DELIVERS THE FIRST BLOW.

ON more than one occasion Air Marshal Arthur Travers Harris, Commander-in-Chief Bomber Command, has stated his belief that were it possible to put 1000 bombers over Germany night after night, the war would be over by the autumn. It is another of his beliefs that were it possible to send over 20,000 'planes to-day the war would be over to-morrow. On the night of Saturday, May 30, Air Marshal Harris directed the first four-figure bomber raid in the history of aerial warfare—well over 1000 bombers, with supporting fighters, delivering a devastating attack on the Ruhr, with Cologne as the main objective. With the arrival of the earliest reports it became immediately clear that this mighty air armada had delivered a crippling blow at the enemy's industrial heart, and increasing evidence indicated that R.A.F. Bomber Command had succeeded in delivering one of the heaviest blows of the war.

(RIGHT.) POINTING TO A MAP OF GERMANY, THE AIR MARSHAL CONFERS WITH HIS CHIEFS OF STAFF: LEFT, AIR VICE-MARSHAL R. GRAHAM; RIGHT, AIR VICE-MARSHAL R. H. M. S. SAUNDBY.





## THE AFTERMATH OF BATTLE: SCENES OF DESOLATION



AFTER THE BATTLE. A TYPICAL SCENE OF SMASHED AND BATTERED MATERIAL AFTER A FIGHT IN THE DESERT. TO THE RIGHT WOULD SEEM TO BE A SHORED-UP TANK TRANSPORTER WITH LOWERED RAMP AND AXLES SUPPORTED ON BOXES.



MORE GERMAN TANKS CAPTURED BY THE IMPERIAL FORCES. A NUMBER OF THESE MAY HAVE BEEN SURRENDERED AFTER THEIR VARIOUS CREWS HAVE BEEN KILLED OR THEIR SUPPLY OF AMMUNITION EXHAUSTED. ON THE OTHER HAND, THEIR CAPTURE MAY HAVE BEEN BROUGHT ABOUT BY MECHANICAL FAILURE.

In one of his despatches, the great Wellington wrote: "Nothing except a battle lost can be half so melancholy as a battle won." He was thinking, no doubt, of the dead and wounded on either side. Certainly it would be difficult to find anything much more melancholy and forlorn than a field of

battle after the fighting is over, and nowhere, except perhaps amid the winter snows of Russia, can this spectacle look more desolate than in the desert. Our pictures speak really for themselves. Derelict tanks, once the epitome of land power, lie broken and blackened. Once-powerful motor



# IN THE DESERT WHEN THE FIGHTING HAS ENDED.



ANOTHER SCENE OF DESOLATION IN THE DESERT, SHOWING IMMOBILISED GERMAN TANKS AFTER A FIGHT. THESE ARE SOME OF THOSE WHICH FAILED TO GET AWAY, DESPITE THE BRILLIANT EFFICIENCY OF THE GERMAN REPAIR WORK IN THE FIELD.



A POIGNANT SCENE AFTER THE TIDE OF BATTLE HAS FLOWED ON—A SOLDIER'S GRAVE MARKED BY NO HEADSTONE, BUT BY A STEEL HELMET ON A RIFLE-BUTT. NO WREATH OF FLOWERS LIES ABOVE THE DEAD, ONLY A SERVICE GAS-MASK.

vehicles sit helplessly and in varying states of dilapidation. Broken guns and twisted iron are mute, with legions of shell cases all telling their story; and most sorry sight of all are the newly-dug graves of those who have laid down their lives for their country. The whole battlefield is strewn with

wreckage and the eye wanders over a dreary vista of rough, broken country, not of sand, but of shingle and stones, with here and there scrubby bushes or cacti pathetically trying to survive. Elsewhere are grey patches of salt, forming altogether a wilderness of which the fruits are graves and junk.



## SALVING A CRIPPLED TANK: WHILE THE DESERT BATTLE RA

DRAWN BY OUR SPECIAL ARTIST



### THE SALVING OF IMMOBILISED TANKS IS A VITAL EQUATION IN MODERN WAR

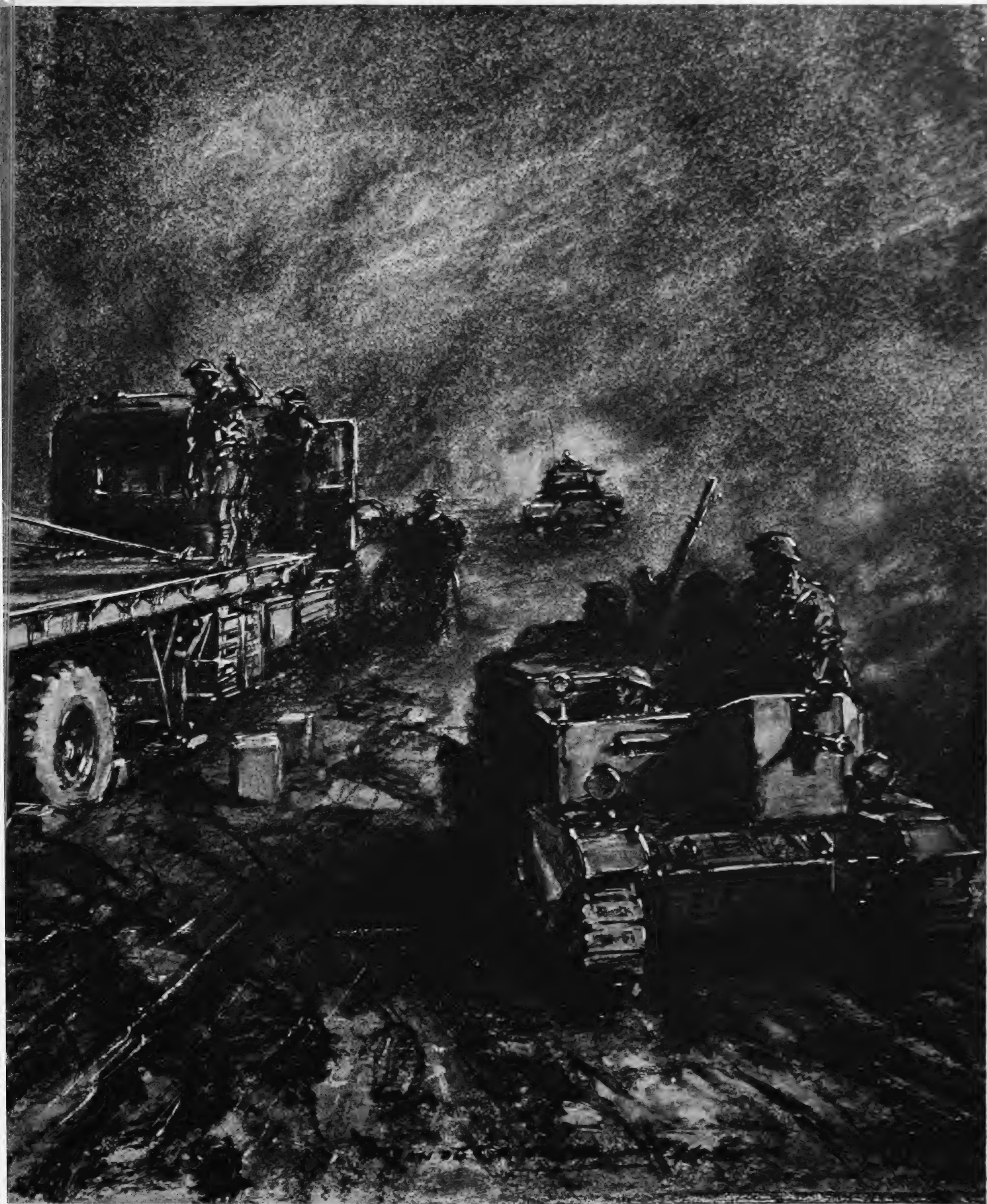
A report from Cairo dated May 31 concerning the battle in the desert refers to the fact that "damaged German tanks have become a total loss because the enemy have been unable to move in to recover their equipment as they did during the November offensive. The British, on the other hand, are fighting

on their own ground." In other words, the Eighth Army found itself in an advantageous position where previously it was at a disadvantage. It is an open secret that in previous desert battles the German organisation for the reclamation of immobilised tanks in the battle zone was superior to our own, but now, the



# ES A TRANSPORTER PICKS UP AN IMMOBILISED "VALENTINE."

CAPTAIN BRYAN DE GRINEAU.



ARE. THE EIGHTH ARMY IS MAKING EXCELLENT USE OF TANK TRANSPORTERS.

lesson learned, with vastly improved equipment and a terrain favouring the forces under General Ritchie's direct command, our tanks which have been temporarily put out of action can be winched up on to a tank transporter and taken swiftly away from the fighting area, reconditioned and put back into the

battle in the shortest possible time. Our special artist pictures such a scene. An immobilised "Valentine" infantry tank is seen being hauled up the ramp of a transporter while the desert battle rages; shells are bursting not far away, and a Bren gun-carrier keeps a watchful eye on the tank and transporter.



# BEHIND THE FRONT IN LIBYA: SALVAGING TANKS AND ENEMY GUNS.



DURING THE LATE LULL IN BIG OPERATIONS IN LIBYA IMPERIAL FORCES WERE BUSY: LAYING RAILS ON SLEEPERS IN EXTENDING THE DESERT RAILWAY.



THE TRAFFIC ON THE EXTENDED RAILWAY INCLUDES THE CARRIAGE OF TANKS DAMAGED WHEN ON PATROL, TAKEN BACK QUICKLY TO BASE FOR REPAIR.



A SAND TABLE, WITH MODEL TANKS, IN THE DESERT, USED TO TRAIN TANK COMMANDERS IN TACTICS AND TO EXPLAIN STRATEGIC MOVES.



A BRIGHTER SIDE OF THE DESERT PATROL: HERE IS A TRAVELLING CANTEEN, WHERE THE TROOPS CAN PURCHASE BEER, CIGARETTES, CHOCOLATE, ETC.



AN IMPORTANT DESERT JOB IS SALVAGING EQUIPMENT. HERE, WITH SUITABLE SLOGANS, MEN WHEEL IN MOTOR TYRES TO A SPECIAL DUMP FOR RECONDITIONING.



IN ANOTHER AREA, GUNS CAPTURED FROM THE ENEMY ARE TAKEN TO A SALVAGE DEPÔT FOR OVERHAUL, AND THEN TO BE USED AGAINST HIM.

Since Rommel on February 8 last reached Gazala, where he has since been anchored until on May 27 he began the new offensive which General Auchinleck was expectantly awaiting, there has been over a three months' lull, in which time both Commanders have been feverishly acquiring supplies. Although described as a "lull," scarcely a day passed without minor engagements by outposts and patrols, some quite lively. The breathing-space gave our forces an opportunity to prepare for the

major operations now resumed. The desert railway was extended by many miles of new track, facilitating the transport of motorised vehicles damaged or with parts outworn. Wells—so important in the desert—were repaired and others brought into service. New repair stations were opened up. Miles of land-mines and other obstructions to an enemy advance were fixed. Booby-traps were laid. The effects of this hard labour are being reaped in the present operations.



# U.S. FIGHTER-BOMBERS: CURTISS "KITTIHAWKS" IN THE DESERT BATTLE.



IN FLIGHT: AN AMERICAN CURTISS "KITTIHAWK" WITH R.A.F. MARKINGS. THESE SINGLE-SEATER CURTISS CRAFT ARE HELPING THE EIGHTH ARMY IN LIBYA.



A "KITTIHAWK" BELONGING TO THE FAMOUS R.A.F. "SHARKNOSE" SQUADRON WHICH HAS LANDED DURING A DESERT SANDSTORM. THE MACHINE CARRIES HEAVY ARMAMENT.



LIKE OUR OWN "HURRICANES," "KITTIHAWKS" HAVE BEEN CONVERTED TO FIGHTER-BOMBERS. AN R.A.F. ARMOURER SEEN BOMBING-UP A "KITTIHAWK."



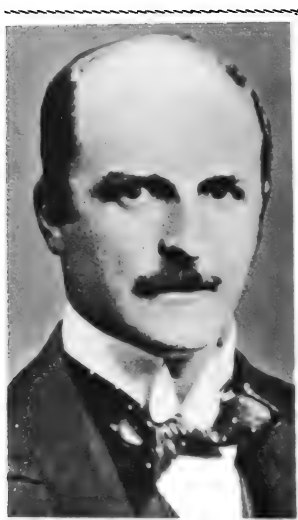
A CLOSE-UP FROM UNDER THE NOSE OF A "KITTIHAWK," SHOWING THE SIZE OF BOMB NOW CARRIED BY THESE FAMOUS CURTISS MACHINES.

The increasing use of American aircraft by the Empire forces is evidenced by the news that Curtiss "Kittihawks" are being used by the Eighth Army in the desert battle. The "Kittihawk," powered by the latest Allison engine, is a development of the "Tomahawk," and is one of an already well-established line of Curtiss aircraft. It is almost identical with the "Tomahawk," but the cockpit and nose have a slightly different appearance. The fire-power of this latest

member of the "hawk" family is some 25 per cent. greater than its forerunner and its maximum speed is in the neighbourhood of 400 miles an hour at a height of 15,000 ft. Its length is 31 ft. 8½ in., and wing-span 37 ft. 3½ in. For the present campaign it would seem that the American single-seater has been adapted for special duties and, like the "Hurricane," equipped as a fighter-bomber. Once the "Kittihawk" has released its bomb-load, it reverts to a fighter craft.



## PERSONALITIES AND EVENTS OF THE WEEK: PEOPLE IN THE PUBLIC EYE.

**MR. ARTHUR MERTON.**

The death of this distinguished journalist, who devoted his career to the peoples and politics of the Middle East, took place on May 27. He was killed in a motor-car accident. In 1912 he joined the staff of "The Times," but in 1930 changed to the "Daily Telegraph."

**MR. GEORGE W. KETTLE.**

A pioneer in publicity and founder of the Dorland Agency, Mr. Kettle died on May 22. Dorland House, built by his enterprise, has been the scene of many industrial and artistic exhibitions, and the Agency is among the most important world advertising organisations.

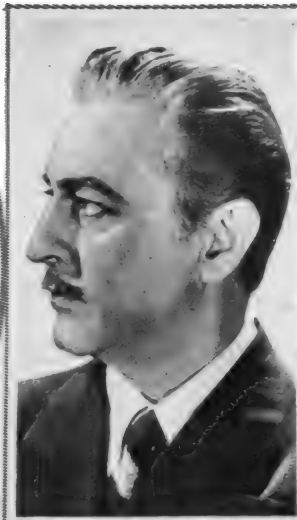


**MAJOR-GENERAL SPEARS, FIRST BRITISH MINISTER TO THE SYRIAN AND LEBANON REPUBLIC, PRESENTS HIS CREDENTIALS TO PRESIDENT CHEIKH TAG ED DIN.**

General Spears, formerly Liaison Officer with General de Gaulle, has been appointed British Minister to the Syrian and Lebanon Republic, and our photograph shows him standing with the President of the Republic, H.E. Cheikh Tag ed Din, after the presentation of his credentials.

**LIEUT.-GEN. LI JEN SUN.**

His Majesty has approved the appointment of General Li Jen Sun, of the Chinese Army, to be an honorary member of the Third Class of Commanders of the Military Division of the Most Excellent Order of the British Empire, in recognition of distinguished service in the field.

**MR. JOHN BARRYMORE.**

The stage and film actor, John Barrymore, died in Hollywood on May 30. He first made his name on the stage, especially as a Shakespearean actor, but turned to the screen. The picture which put him in the front rank of film actors was "Dr. Jekyll and Mr. Hyde."

**LIEUT.-GENERAL MASON MACFARLANE.**

General MacFarlane, who has been appointed Governor and C-in-C. of Gibraltar in succession to Lord Gort, V.C., is fifty-two. He was Director of Military Intelligence at G.H.Q. under Lord Gort in France. During the withdrawal from Dunkirk he commanded a force to hold the river crossings in the Douai-Aras region. He received the D.S.O. and a mention in despatches. After Dunkirk, commanded in Gibraltar, and later led the British Military Mission to Moscow.



**THE SURRENDER OF DIEGO SUAREZ: A SCENE AT THE SIGNING OF THE TREATY, WHICH TOOK PLACE AT BRITISH HEADQUARTERS.**

The above photograph, wirelessly from Cairo, shows the scene at British headquarters after the surrender of Diego Suarez, Madagascar. The French naval, military, and air representatives are seen with their backs to the camera, whilst the British Combined Services delegation, including Rear-Admiral C. N. Syfret (centre), are facing. Admiral Syfret commanded the British naval forces throughout the brilliant action which resulted in the Vichy surrender.

**PRESIDENT AVILA CAMACHO.**

The President of Mexico, Avila Camacho, asked for a declaration of a state of war on the Axis on May 28, and Mexico has been at war from noon on that day. This state of affairs was decided by the sinking of two Mexican tankers by Germany recently. The Chamber of Deputies and the Senate unanimously approved Camacho's request and granted him full powers to control espionage and commercial activities and to expand all defences.



**AMERICAN AND BRITISH WAR CHIEFS AT THE DORCHESTER: MEMBERS OF THE U.S. WAR MISSION MEET THE HEADS OF ALLIED SERVICES AT AN INFORMAL RECEPTION.**

Members of the U.S. war mission, now on a visit to Britain for discussions on every subject pertaining to the war effort, met the heads of British and Allied Services at an informal reception given by Major-General James E. Chaney, Commanding Officer of the U.S. Forces in the British Isles, at the Dorchester Hotel on May 28. Above, left, are seen (l. to r.) Sir Archibald Sinclair; Adm. John H. Towers, Chief of the U.S. Navy Bureau of Aeronautics; Lieut.-General [Continued opposite



**SIR ARCHIBALD SINCLAIR, AIR MINISTER (LEFT), CHATS WITH LIEUT.-GENERAL BREHON SOMERVELL, U.S. SUPPLY CHIEF, AT THE RECEPTION.**

[Continued.] Henry Arnold, Chief of the U.S. Army Air Force; Lord Louis Mountbatten, Chief of Combined Operations; Air Chief-Marshal Sir Charles Portal, Chief of Air Staff; and Major-General James E. Chaney, Commanding Officer U.S. Forces in the British Isles. Complete union between the British and American forces engaged in the war was predicted by Lieut.-General Somervell, Chief of the American Supply Services, seen talking to Sir Archibald Sinclair (above, right).



## BRITISH AND GERMAN PERSONALITIES IN THE PUBLIC EYE TO-DAY.



GENERAL ROMMEL AGAIN IN THE NEWS: THE C-IN-C. OF THE AFRIKA KORPS HELPS TO PUSH HIS CAR OUT OF A STICKY PATCH IN LIBYA.

Two German leaders are in the news this week, Rommel and Heydrich. General Rommel, as C-in-C. of the Afrika Korps, has launched his long-expected offensive against the Allies in Libya. As a commander of courage and resource he is well known to the Eighth Army under General Ritchie. According to Berlin, Rommel has been authorized to act on his own judgment, independent of the German High Command. Heydrich is thirty-eight; he was



"THE BUTCHER OF MORAVIA" SHOT BY A CZECH PATRIOT: REINHARD HEYDRICH (R.) WITH THE GERMAN S.S. AND POLICE CHIEF, HIMMLER.

cashiered from the German Navy in 1931. Himmler, chief of all the police and the S.S., made him his adjutant, in which capacity he organised the Dachau concentration camp, the worst in Germany. Known as "the butcher of Moravia" for his brutality when "Protector" of Bohemia and Moravia, Heydrich has reaped his just deserts. He was shot, and seriously wounded, in Prague on May 27, some accounts say by Nazis.



PRINCESS ELIZABETH VISITS HER REGIMENT: THE KING AND QUEEN AND THE TWO PRINCESSES WITH OFFICERS OF THE GRENADIER GUARDS.

Princess Elizabeth recently inspected a battalion of her own regiment, the Grenadier Guards, at a barracks in the South-Eastern Command. After taking the salute at a march-past, the Princess, with the King, who is Colonel-in-Chief of the regiment, and the commanding officer, walked round the ranks. It was last February that the King appointed Princess Elizabeth Colonel of the regiment, an appointment which attracted special interest as it is the first



COLONEL THE PRINCESS ELIZABETH SHAKES HANDS WITH AN OFFICER OF HER REGIMENT. SHE IS WEARING THE REGIMENTAL BADGE IN HER HAT.

time in the history of the senior regiment of Foot Guards that a woman has held that position. Princess Elizabeth is sixteen years old, and on her birthday, on Tuesday, April 21, she first met her regiment officially at a big birthday parade at Windsor Castle, and as a birthday gift from the regiment she received the diamond brooch in the shape of a grenade which she is wearing in the above photograph.



## THE THREE "BAEDEKER" HUN RAIDS ON EXETER CATHEDRAL (DATING FROM 1107) DAMAGED



MANY HISTORIC SITES IN EXETER WERE DESTROYED IN THREE RAIDS. A FORMER "SHOW PLACE," BAMPFIELD HOUSE.



CHIMNEYS UPSTANDING, HOUSES FLATTENED: A SCENE IN MILK STREET, AND, SEEN IN THE FOREGROUND, THE OBELISK MARKING THE SITE OF THE CONDUIT OF ANCIENT EXETER'S WATER SUPPLY.

ST. MARY ARCHES, ONE OF EXETER'S ECCLESIASTICAL GEMS, OF NORMAN ARCHITECTURE OF THE EARLY THIRTEENTH CENTURY, NOW A SHAMBLES. THIS ANCIENT CITY, LIKE NORWICH, IS RENOWNED FOR ITS CHURCHES.



EXETER CATHEDRAL: AN EXTERIOR VIEW OF BOMB DAMAGE. THE DÉBRIS IS OF ST. JAMES'S CHAPEL AND THE SOUTH AISLE BEYOND.



THE GLOBE HOTEL, ONE OF THE BEST-KNOWN OLD-FASHIONED HOSTELRIES IN THE WEST COUNTRY. IN CATHEDRAL CLOSE, IT STANDS STARK AND GUTTED.



THE DEVASTATED SHELL OF ST. LUKE'S, THE DIOCESAN TRAINING COLLEGE OF DEVON COUNTY. MAINLY DESTROYED. STUDENTS RESCUING SOME OF THEIR BELONGINGS.

EXETER, so famed through history, existing long before Roman times, of which Freeman says, no other English city "can trace up a life so unbroken to so remote a past," was the first victim of the Hun "Baedeker" raids, and the latest, suffering three separate visits. Our photographs show only part of the damage sustained, the most destructive being on the third occasion, May 4, but Exeter had some satisfaction in learning that seven bombers were brought down. The courage of the townsfolk and the efficiency of

[Continued opposite.]



# AND SOME OF THEIR RESULTS: ITS FAMOUS CHURCHES AND "SHOW PLACES" OBLITERATED.



EXETER CATHEDRAL DAMAGED: A HUN BOMB STRUCK THE SOUTH CHOIR AISLE, AND CAUSED CONSIDERABLE DEVASTATION. THE LECTERN AND ITS EAGLE STANDS UNMOVED AMID THE DÉBRIS ALL AROUND.



ST. SIDWELL'S CHURCH, REDUCED TO RUINS. HERE A BOMB STRUCK THE TOWER AND SPLIT IT IN TWO.



IRREPARABLE LOSS WAS SUSTAINED TO FAMOUS FIFTEENTH-CENTURY STAINED-GLASS WINDOWS IN THE CATHEDRAL, MANY OF WHICH WERE DESTROYED BY BLAST.



THE HALL OF THE VICARS CHORAL IN SOUTH STREET, ANOTHER GEM OF ECCLESIASTICAL ARCHITECTURE UTTERLY DESTROYED IN THE SECOND RAID. IT DATES FROM 1401.



ANOTHER HISTORIC LOSS: THE TOWN HOUSE OF THE PRIOR OF PLYMPTON, OF WHICH ONLY ONE SHATTERED WALL STANDS, WITH ITS PERPENDICULAR WINDOWS.



THE INTERIOR OF WHAT WAS THE FAMOUS MARKET HALL. THIS CENTRE OF BUSY TRADERS IS TYPICAL OF MANY OTHER DEVASTATED SITES.

*Continued.]*

the Civil Defence services were outstanding. Flying low, the raiders dropped high explosive and incendiary bombs and machine-gunned streets. The famous Cathedral (dating from 1107 to 1369), among other historic buildings, suffered severely, St. James's Chapel (1257-1280) being destroyed and part of the Choir Aisle, the Bishop's Palace, and also many priceless mediæval stained-glass windows damaged. Other churches and buildings of historic memory were also destroyed, including the well-known Town House of the Prior of Plympton.



## A PORTRAIT OF A GALLANT MILITARY LEADER.

"CHARLES DE GAULLE." By PHILIPPE BARRÈS.\*

An appreciation by SIR JOHN SQUIRE.

THE more "speeding-up," the more forgetfulness. The limelight, at the moment, is concentrated on the Russo-German front, where the Russians, as always, are stoutly (and, with a knowledge of victory in the background) defending themselves against an invader. To a lesser degree it is concentrated on the Indo-Burmese front, where something physical is happening which can be journalistically reported. And the limelight, tense and ready to switch, is prepared to shed full illumination on some new enterprise, whether in Europe or the Pacific, undertaken by ourselves and the Americans.



THE LEADER OF THE FREE FRENCH FORCES AT HOME: GENERAL AND MADAME DE GAULLE AT THEIR COUNTRY HOUSE.

But time marches, rather remorselessly, on; and there is a tendency, in this age of a journalistic concentration on the moment, to forget the people who are not in the immediate limelight. There are the Czechs, who wanted to make a stand and were decently deterred from doing so. There are the Poles, who made the first stand, were tanked and bombed to pieces, and are reassembling everywhere with their old anthem on their lips which says that Poland will never die so long as one Pole still lives. There are the Greeks, who whacked the Italian aggressors, were only beaten when the Germans walked in, and have troops fighting in Libya at this moment. There are the Yugoslavs, who, with their mountainous country overrun, still keep up a great guerilla tantalising of the occupying "Herrenvolk." There are the Dutch, the Belgians, the Norwegians, all of whom resisted to the best of their ability. But there are also the French.

Here, in French and in English, is the story of General de Gaulle; and he is France. Armchair people here have criticised the French because they didn't arm properly and trusted too much in a Maginot Line which was not sufficiently extended. It is all true: General de Gaulle wrote a text-book about mechanised warfare of which nobody but the Germans took any notice. It is also true that British

Governments, with the parties behind them clamouring for "social services," anti-vaccination, nationalisation of the land and whatever else (and the cranks, with the world on a razor-edge, are still producing their Tappertit resolutions), allowed the Huns to laugh at the Treaty of Versailles, and rearm under our noses, and do thing after thing while we still sat supine. The French were beaten in the field, and beaten by weapons which the young de Gaulle had eagerly demanded. The tanks and the dive-bombers, pitiless against roads choked with soldiery and refugees, brought France to a standstill. And, according to this book and various other sources of information, the well-meaning and better-than-most Prime Minister, Paul Reynaud, was influenced at the last moment by a sinister woman and threw up the sponge—when he might have gone overseas, and kept the Navy, and kept the Colonies, and saved the Allies of France all the painful trouble of Oran, of Syria and of Madagascar.

De Gaulle, a scholar-soldier, of the type which Saint-Cyr plentifully produces—not a politician, but a passionate soldier and civilised man, who might be caught, in his leisure moments, reading Virgil, Pascal, or Blaise de Mouluc—could not stand it. He had been an intermediary between the determined Mr. Churchill and the flickering French Government; and, at the last moment, he escaped to England with a suit-case, a few pairs of trousers, and no followers at all, and booked a bedroom in an hotel near Victoria.

From that everything has been built up. Daily the boys, in fishing-boats across the Channel, or on foot across Spain, escape to join him. He is still unpolitical and still unambitious; when he has done his job he will retire. He is a reticent man; his family used to say, jokingly, that he was brought up in the ice-box. But there is a burning zeal within him, a love of the eternal

France, a hatred of the barbarian, an unquenchable sense of honour, and the pledged word. In this book the reader will find both a chevalier without fear and without reproach and a military thinker who despairingly wrote books and memoranda showing his Government and the world how the next war—namely, this war—was bound to be waged. Here is his biography; and the story of France in collapse.

The translation is a good one, and best in the best and most eloquent parts. Here and there the English reader will be pulled up with a jerk and wonder "how on earth can Frenchmen talk like Americans"; but, if an equal effort after lively

colloquialism had been made by an English translator, American readers would probably have wondered how on earth Frenchmen can have talked like what-not Britishers. A young officer, in the original, is quoted as saying: "*Ce qu'on appelle la collaboration avec l'Allemagne est inadmissible... et puis quoi?*"; which is translated: "What the Vichy people call collaboration with Germany is all a lot of hokey.... So what?" In the original there occur the sentences: "*Mais voici un simple matelot, un Breton de Rennes, l'air décidé, la voix traînante. Il explique: J'étais à Toulon avec un copain.*" This appears in the translation as: "Then there was a Breton from Rennes, a hard-boiled guy with a drawling voice. He told his story this way: 'I was in Toulon with a buddy.'" "*N'avaient pas arrangé les choses*" appears as "hadn't helped matters any." Again: "*Voyons, vous et moi, sommes-nous ce que nous étions en 1916, des sous-lieutenants de vingt ans, chefs de section en première ligne des exécutants? Alors, je suis d'accord avec vous, refusons les faits, stimulons-nous d'un optimisme imbécile*" is translated, "Look here, if we were the same as we were in 1916, shavetails of twenty heading combat platoons in the front lines, then I might agree that the thing to do is to ignore the facts and keep ourselves pepped up with childish optimism." "*Qui poursuivait alors son effort de redressement*" appears as "who was trying to stage a come-back."

I haven't the slightest idea what a "shavetail" is, although I dare say that my frequent, very welcome, and anonymous correspondent in Boston, Mass., has. Between "educated" English and American speech and language there is virtually no difference; but when we get to slang we get to dialect, and I think that translators on both sides, who are producing translations for both sides, would be well advised, when dealing with colloquialisms, to use terms current on both sides.



A BUNCH OF KEYS: ALL THAT REMAINS TO GENERAL AND MADAME DE GAULLE OF THEIR FORMER HOME IN FRANCE.

### NEW £10,000 "WASTE PAPER FOR MUNITIONS" COMPETITION.

AN added impetus to the great drive for waste paper has been given by a new salvage competition which is to last for three months. The prize money amounts to £10,000, and the contest will be decided as between boroughs, urban and rural councils respectively. The last competition brought in great quantities of vitally necessary used paper and the public made a special effort, but experts consider that there are still many thousands of tons of paper hidden away and forgotten and which must be brought to light as a contribution to the war effort. Hoarding is a crime in wartime; everybody knows this, yet those who would not dream of hoarding food have no scruples about hoarding munitions of war. Hoarding munitions! That is precisely what everyone is doing who keeps unnecessary books, magazines and paper of every kind. So turn them all out and help win the war and a prize for your district.

\* "Charles de Gaulle." By Philippe Barrès. With a Portrait. (Hutchinson; 9s. 6d.)

"Charles de Gaulle." By Philippe Barrès. Illustrated. (Continental Publishers and Distributors, Ltd.—formerly Hachette.)

But I was sorry for the translator when he encountered the word "*copain*." "Buddy" is the best he can do; "pal," an Englishman, making a similar effort, would probably venture. "Boon companion" is much too pompous, and almost extinct. I can't suggest anything, and am grateful that it is not my business to translate the cheerier kind of French dialogue.



## NEWS PICTURES—HAPPENINGS FROM ALL QUARTERS OF THE GLOBE.



THE "SCORCHING" OF BURMA'S OIL-WELLS: MILLION-GALLON OIL-TANKS ABLAZE AT YENANGYAUNG AND THROWING OUT VAST VOLUMES OF BLACK SMOKE.

On April 16, when the Japanese forces were closing in on the famous main oilfield of Yenangyaung, British engineering experts, who had waited until the last minute before committing one of the greatest demolition acts of the war, blew up the oilfield, and also the electricity and generating plant which was responsible for 85 per cent. of the total oil production in Burma. General Alexander, lately C-in-C. in Burma, at a Press conference in New Delhi on May 30, said that the destruction



A VIEW BY NIGHT OF YENANGYAUNG'S BURNING OILFIELD, WHERE 600 WELLS WERE "SCORCHED" AND CRASHED IN FLAME AND SMOKE AS JAPANESE FORCES ENTERED.

of the Burma oilfields was complete and experts thought the Japanese would get no petrol from the oilfield for a year. Altogether over 600 wells were destroyed, together with property valued at between fifteen and twenty million pounds sterling. Previously the great oil refineries of Syria had been scorched similarly. The necessary destruction of the oil is a severe blow to the needs of India and especially China, who relied on it.



THE GREAT BRONZE CANDELABRUM BY BENNO ELKAN PRESENTED ANONYMOUSLY TO WESTMINSTER ABBEY.

Two and a half years' work, Benno Elkan, until 1933 Germany's big sculptor, who came here in exile, has completed a second candelabrum, forming a pair of candelabra presented by an anonymous donor to Westminster Abbey. It is almost a replica of the first, but represents New Testament figures, is 6 ft. high, 7 ft. wide, and bears 33 candles.



NOW ON SPECIAL EXHIBITION AT THE NATIONAL GALLERY: PIETER DE HOOCH'S "COURTYARD OF A DUTCH HOUSE."

The Trustees of the National Gallery, in accordance with their plan of specially selecting an old Master's work, on June 3 placed on exhibition the above well-known picture of the Dutch master Pieter de Hooch (1629-1683). It reveals the painter's genius in an outdoor scene and is a marvel of geometrical design and scientific harmony of colour.



GENERAL MACARTHUR ATTENDS THE AUSTRALIAN PARLIAMENT: SEATED AT EASE ON THE FLOOR OF THE HOUSE.

"If the Australians can fight as well as they can talk, the Allies have nothing to fear from the Axis." These words were spoken by General MacArthur, Supreme Commander of the S.W. Pacific Area, when he attended the Australian Parliament at Canberra recently. MacArthur has been having discussions and talks ever since his arrival in Australia.



A GERMAN FREIGHTER IN DRY DOCK AT DIEGO SUAREZ, MADAGASCAR, SCUTTLED BY HER GERMAN CREW.

Among other matters when the British forces descended on Diego Suarez, there happened to be the German merchant ship "Warenfels" in dry dock being refitted, thus showing how the Germans have been permitted by Vichy to utilise her colonial facilities. Her crew, now taken prisoner, attempted to scuttle the ship, which was only partly destroyed and is now being salvaged. Diego Suarez, according to latest reports, has settled down peacefully under British military control.



A MIDGET JAPANESE SUBMARINE, CAPTURED AT PEARL HARBOR: ITS LENGTH IS 42 FT. IT CARRIES TWO TORPEDOES AND A CREW OF TWO.

When Pearl Harbour, Hawaii, was raided on December 7 by Japanese planes, our American Allies captured a two-man midget submarine, now on exhibition in Pearl Harbour. On June 1, three such "midgets" were reported from General MacArthur's headquarters to have been destroyed by depth-charges in Sydney Harbour. These tiny two-man submarines have a length of 42 ft., have a cruising speed of about 200 miles, and carry two 18-in. torpedoes.



## NEW WAR PICTURES BY BRITISH ARTISTS AT THE NATIONAL GALLERY.



"ROLLING UP A NEW BALLOON"; BY ROBERT AUSTIN.  
(Commissioned in 1941.)



"CLEANING THE CENTRAL ANCHORAGE SNATCH"; BY ROBERT AUSTIN.  
(Commissioned in 1941.)



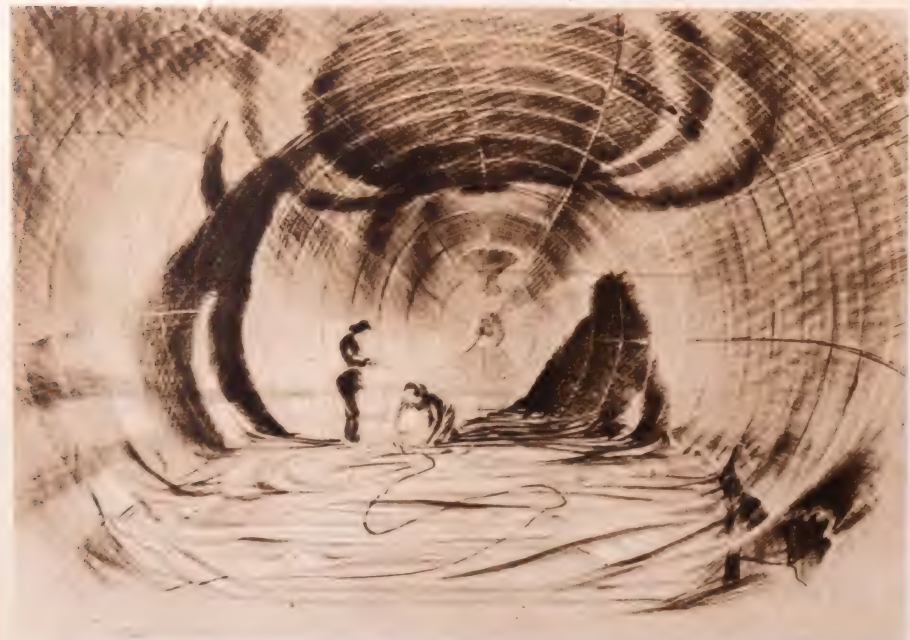
"IN THE TAILOR'S SHOP"; BY LIEUTENANT J. WORSLEY.  
(Purchased 1941.)



"IN THE GALLEY"; A STUDY BY LIEUTENANT J. WORSLEY.  
(Purchased 1941.)



"INSPECTING THE INTERIOR OF A RUDDER"; BY LESLIE COLE.  
(Official Purchase, 1941.)



"W.A.A.F.s WORKING INSIDE A BALLOON"; BY LESLIE COLE. (Official Purchase, 1941.)



"W.A.A.F. GIRLS AND RIGGING INSIDE A STABILISER"; BY LESLIE COLE. (Official Purchase, 1941.)

Two further rooms of new war pictures by British artists have been opened to the public at the National Gallery. These rooms contain pictures of a greater variety of subjects than ever before, and include a series of the war in Russia, the arrival of the first American troops in Northern Ireland, Abyssinia, W.A.A.F. girls working the Balloon Barrage, and Canadian mechanised troops in this country. Among these new pictures are many by artists themselves serving in the Forces, some of whom

have never exhibited before. Two artists who have chosen the Barrage Balloon as their subject—R. Austin and Leslie Cole—show some interesting activities pertaining to Balloon Command and the W.A.A.F. girls' work. Lieutenant Worsley's two studies shown above are outstandingly human in their conception and not a little humorous. Richard Eurich, whose name is well known to frequenters of the National Gallery war pictures exhibition, has contributed a striking picture of the rescue of

[Continued opposite.]



## FURTHER INTERESTING EXAMPLES OF PICTURES IN THE EXHIBITION.



"RESCUE OF THE ONLY SURVIVOR OF A TORPEDOED MERCHANT SHIP"; BY RICHARD EURICH.



"STRETCHER PARTY MEN AT WORK IN GAS CLOTHING"; BY WILLIAM CLAUSE.

*Continued.]*

the only survivor from a torpedoed merchant ship; the man, whose small boat has been dashed to pieces on the rocks, is struggling in the surf whilst a life-line is being thrown to him by one rescuer and another is attempting to reach him by wading out into the sea. Sir Walter Russell, A.R.A., Keeper of the Royal Academy since 1927 and Trustee of the Tate Gallery since 1938, has a fine portrait of Air Chief Marshal Sir Hugh Dowding in the exhibition. Sir Muirhead Bone's "Minelaying," a strong picture full of movement, is a grim reminder of the danger attendant upon the handling of such instruments of destruction. Minelaying is hazardous work, and is as often as not carried out in enemy waters. This growing exhibition of war pictures draws a steady crowd to the National Gallery every day, and besides those to be seen there, there are selections on tour in England and overseas. A further collection is now ready for dispatch to South America.



"MINELAYING"; BY SIR MUIRHEAD BONE: A SCENE ON BOARD A BRITISH MINELAYER, AS PORTRAYED BY THE OFFICIAL ADMIRALTY WAR ARTIST.



"SIR HUGH DOWDING"; BY SIR WALTER RUSSELL.



"A 'SUNDERLAND' BY A FROZEN LAKE, FEBRUARY 1942"; BY E. CHRISTOPHER PERKINS.



## THE WORLD OF SCIENCE.

### THE MYSTERY OF THE VIRUS.

WHAT is a virus? It is easier to say what it does than what it is. Its name suggests virulence and it is an inveterate poisoner of man and beast, of bird and vegetable. It can kill a parrot or cripple a President. It contributes to the slaughter of the cattle in the pasture or the pig in the sty. It infects any of us with influenza or the common cold. It strikes at our dog; it does not stop short of our tobacco. All these and other crimes it commits and cannot be brought to book for them, and can with difficulty be prevented from continuing with them.

Its chief protection from justice is its cloak of invisibility. No unaided eye has ever seen a virus, or ever will, though its work is plain enough. A first-class laboratory microscope will reveal most of the germs which afflict us, and tell of their way of life and how they may be met. But this method fails with the virus. Only the highest powered and specially constructed microscope, employing what amounts to invisible light, can make the lesser viruses visible by photographing them. Thus photographed, the virus appears as a speck on the photographic background. The specks, if they were not magnified, might be less than the millionth of an inch in diameter, and what their structure or their behaviour may be is unrevealed.

Some of these viruses are so small that they have sown a doubt whether anything so minute could contain the structure and machinery of a living thing. Yet they unfailingly behave as if they were alive. Like the common germs, bacteria or protozoa that can be seen and watched, they breed and multiply by millions in surroundings that suit them, taking their sustenance therefrom, and as far as is known they breed true, every succeeding generation being like its forefathers and producing the same dire results. Once a poisoner, always a poisoner. Like the commoner germs, the virus can be transferred, and is transferred, from one victim to another. One of the difficulties in dealing with it is that while we know that it is transferred, we do not know how. Its poison will run like a prairie fire through a herd of cattle or a pack of hounds, or spread in an influenza epidemic over half the world. Yes, but how? What makes it so hard to say is that we cannot pin the virus down for close examination. A recognised germ of the common kind, even if it be so excessively minute as to approach a virus in smallness, can usually be bottled and fed. On a vegetable jelly or a prepared broth it can be encouraged to propagate its kind in hordes. Not so the virus. It rejects such dietary doles, goes on hunger-strike, and dies. It is a corpse before anything of importance can be found about its processes. These can take place only inside the creature, man or beast or other host, where it is when alive; the undesirable tenant. It repays the host on which it feeds by poisoning the cells of his body, and when these fail it, the virus fails also and dies, unless it can find another unwilling host. Otherwise the virus which poisons the animal is merely a speck of poison dead to all the world.

This is where knowledge about the virus hovered for some time. But about two years ago a discovery about the viruses which infect plants started a new idea about their character. The first virus to be discovered was a plant virus, that of the mosaic disease of the tobacco leaf, found nearly fifty years since. It is a fairly large virus, as viruses go, and accessible in quantity for investigation. Dr. W. M. Stanley rather startled the world by declaring that he had reduced preparations of it to needle-shaped crystals; and put forward the idea that this particular plant virus was not an organised living creature but only a particle of living matter which, without a life of its own, could poison growing and living cells by attaching itself to them.

The idea was rather coldly received here, but in America commanded much popularity, apart from its scientific bearing, because it was taken to show the existence of a link between what was alive and what was not. A link, in short, between the quick and the dead. Stanley's specks of protein were not alive, though all living creatures must have protein in their make-up. But a speck of protein must always remain a speck. It can no more grow into a living creature, able to propagate and infallibly reproduce its kind, than a speck of chicken flesh can grow into a fowl.

It was held to be very unlikely that the crystal-line specks should produce more and more specks like themselves by forcing the living cells to provide them with material out of their own resources. But the plant-virus believers were not discouraged. They examined more and more plants attacked by virus diseases. The tomato was added to the tobacco mosaic disease and the cucumber and the potato. The most fruitful centre of research in England was the Rothamsted Experimental Station at Harpenden. There had been some doubt about the structure and purity of Stanley's tobacco mosaic crystals, but Rothamsted, through Bawden and Pirie, succeeded in isolating from a diseased tomato plant some undeniable crystals of regular shape. The tomato "bushy stunt" crystal, a regular dodecahedron, was handsomely acknowledged by Sir Patrick Laidlaw, the chief exponent of the living animal virus.

In the last pronouncement he delivered he offered a compromise. The viruses, he said in effect, were a mixed bag. They varied in size from the many millionths of an inch of the virus which gives rise to foot-and-mouth disease or infantile paralysis, to the one twenty times its diameter which produces psittacosis in the parrot. Put in another way, they vary from a size nearly in the grasp of the best microscopes of the laboratory to something only about a third the dimensions of a molecule of the hæmoglobin of our blood corpuscles. And they vary in virulence from a human point of view from those which kill us to those which we can view in a detached way when they attack plants. The one thing common to them all is that they are the complete parasites, flourishing only in the surroundings to which they are accustomed—namely, in the body cells of their victims. They live, as it were, a borrowed life, which is truly the supreme summit of parasitism.

E. S. GREW.

## BOOKS OF THE DAY.

### BRITAIN AND AMERICA: MEMOIRS: HISTORY: REMINISCENCE.

ONE of the most grievous effects of war is its waste of fine brain-power and the extinction of valuable young lives, leaving the harvest of genius ungarnished. Now that civilians on the home front are subjected to the worst the enemy can do from the air, there is no longer any suspicion of shirking danger if it were decided that a man would serve his country better by working at home than campaigning abroad. An M.P., for instance, would incur no stigma by continuing his Parliamentary duties at a time when the House itself has been bombed. These reflections were prompted by the story of a political career, begun with brilliant promise, but prematurely closed by a German bullet. It is told in "RONALD CARTLAND." By his sister, Barbara Cartland. With Preface by the Rt. Hon. Winston S. Churchill, and 16 Illustrations (Collins; 12s. 6d.).

Ronald Cartland was no sordid careerist, using politics as the ladder of worldly success. He was moved by intense sympathy for the "under-dogs" of society, as shown especially by his efforts on behalf of the unemployed in distressed areas before the war. During his four years in Parliament, he took a very independent line and soon made his mark in the Commons as a well-informed and compelling debater. He was regarded as a possible Premier of the future, while some considered him more socialistic than the Socialists.

Three years before the war, foreseeing its approach, and unwilling to "ask other young men to go and fight for him," he had joined a Territorial regiment of Yeomanry. When the call came, he proved a keen and efficient officer. He was killed in action during the retreat to Dunkirk. By his death, as Mr. Churchill says, "the Army and the House of Commons suffered a grievous loss." This admirable memoir gives a charmingly intimate picture of his home circle, and has the vivid quality to be expected of a practised novelist.

As Tennyson says of another genius "dead ere his prime"—his own friend, Arthur Hallam,

The world which credits what is done  
Is cold to all that might have been.

For that reason the foregoing book must yield, in historical importance, to a new biography of a celebrated American woman novelist, whose long and crowded career is recorded in "CRUSADER IN CRINOLINE": The Life of Harriet Beecher Stowe. By Forrest Wilson. With 24 Illustrations (Hutchinson; 18s.). Mr. Wilson's book is not only engrossing as a personal portrait and a revelation of character, but is particularly instructive to modern readers, on both sides of the Atlantic, for its "flood-light" on a momentous period of American history. We can hardly realise to-day the immense *réclame* of "Uncle Tom's Cabin," in its relation to the problem of slavery and the Civil War of North and South. Mr. Wilson's pages recall, besides, that the famous novel was only one item of a prolific literary output. Its author outlived her reputation, and in later life caused a less gratifying *furor* by her attack on Byron. Her old age was clouded by mental derangement; but she remains one of the world's great women, and this book worthily revives her fame.

To-day we are fighting a fouler slavery than Uncle Tom ever knew, and so we are more interested just now in the greatest living American champion of democratic freedom. Biographers have been busy of late with his personality, private life, and public career; but none, I think, has produced a more vivid portrait or revealing record than "ROOSEVELT": World Statesman. By Basil Woon. With 11 Illustrations (Peter Davies; 10s. 6d.). It is certainly the best book about the President that I have read. As the work of a far-travelled English journalist who knows him personally, and has lived much in America, it shows exceptional breadth of view, emphasising (as the sub-title indicates) the worldwide value of Mr. Roosevelt's statesmanship. At the same time it gives a lively picture of the American political scene, and will do much to make our kindred nations better acquainted.

That laudable motive has likewise inspired "THE STORY OF THE AMERICAN PEOPLE." By C. F. Strong, author of "Modern Political Constitutions" and "Days of Democracy." With Maps and 42 Illustrations (Hodder and Stoughton; 7s. 6d.). Here "the need for a book on American history written by an Englishman" is supplied in a handy and attractive form. As the author points out, American historians have provided many excellent works on their own country, but they inevitably assume "an inherent sense" of home-grown traditions, phenomena and institutions unfamiliar to the British reader. He requires a "slant" on the American scene from his own angle, and he gets it in Mr. Strong's clear, concise and readable pages. Americans, who are more sociable and enterprising travellers than we are, know us better than we know them. It is highly important that any ignorance or prejudice on either side should be dispelled. As

a means to that end, this book does excellent service.

One phase of American social evolution, which to law-abiding citizens of our older and more settled community is hard to understand, is the power once exercised by organised crime. Some of the worst developments are recorded in "THE UNDERWORLD OF CHICAGO": An Informal History. By Herbert Asbury, author of "The Gangs of New York," "The French Quarter" and "The Barbary Coast." With 26 Illustrations (Hale; 18s.). Beginning with the foundation of Chicago in 1804, the book traces the lurid side of its history—famous criminals, and their methods, graft, corruption, murder, and commercialised vice, culminating in the period of "gangdom" (the author's word) under such leaders as Al Capone and John Torrio. Of some 800 gunmen employed by Torrio, it is stated, 85 per cent. were Italians or Sicilians. Concerning Capone we read: "The city is still struggling to erase the imprint of his fine Italian hand."

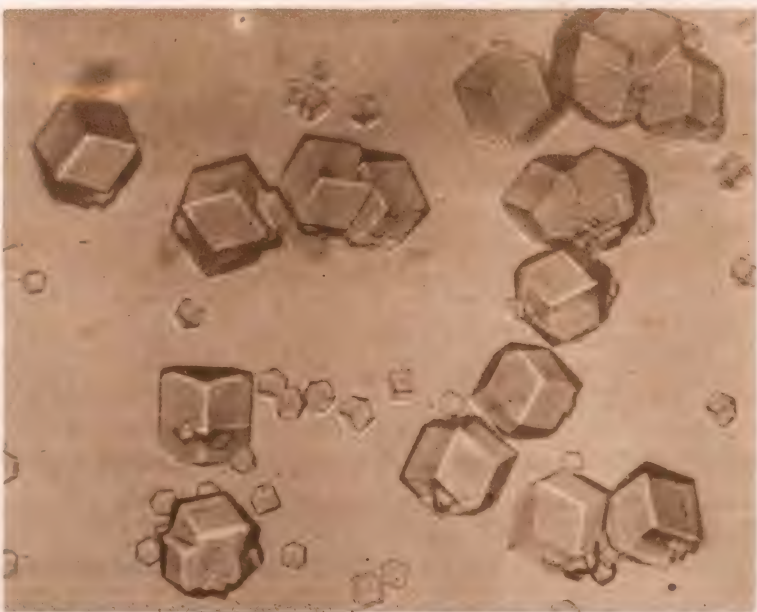
C. E. BYLES.



A TOBACCO LEAF SUFFERING FROM THE MOSAIC VIRUS: THE FIRST PLANT VIRUS DISCLOSING NEEDLE-SHAPED CRYSTALS OF PROTEIN MOLECULES.



TWO POTATO LEAVES, SHOWING (LEFT) THE FIRST BLACK NECROTIC SPOTS, AND (RIGHT) THE COLLAPSE OF THE WHOLE LEAF. ONE OF THE MOST IMPORTANT OF POTATO DISEASES.



ONE OF THE FEW VIRUSES ISOLATED IN AN APPARENTLY PURE STATE: VIRUS CRYSTALS ISOLATED FROM TOMATO PLANTS SUFFERING FROM THE VIRUS DISEASE OF "BUSHY STUNT."

Photographs by Courtesy of the Rothamsted Experimental Station.



# TRANQUILLITY



The discreet illumination of the concert hall lights up sensitive, vibrating hands and picks out jewel-tints in the mellowed, burnished pine of the fine Cremona 'cello . . . The immortal melody, rising and falling in golden curves, weaves its tortuous way through a slow movement of infinite sadness and serenity. The world will return to tranquillity, to the peaceful pursuits of mind and heart, to the onward march of art and science . . . The post-war world will bring perhaps a *renaissance* of creative genius. It will certainly see great strides in scientific knowledge . . . and wonderful achievements in the realms of commerce, communications, transport. When the time comes, the Standard Motor Company will produce new cars for the peace time world . . .



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engineering files, edge tools, engineers and blacksmiths' tools, saws, machine knives, shovels, spades and forks—all basic lines of manufacture destined to make the firm world-famous.

John Bedford, the founder, was a landowner and yeoman farmer of ancient and honourable lineage in a direct male descent dating back to 1250, and it was to set his third son John up in business in the steel trade that he rented a forge operated by power derived from water wheels, driven by the River Don. By family inheritance and marriage this son amassed wealth and was able to give his son, the third John Bedford, the benefit of what was a most exceptional privilege in those days—a Continental education.

## EARLY TRADE BOOM

It was this John Bedford who founded the firm as we know it to-day. Returning to Sheffield a brilliant linguist, a man of polish, of outstanding personality, and a keen man of business, he decided, upon becoming head of the firm, to get a share of a trade boom then being experienced in Sheffield and other industrial centres of England.

In addition to keeping on the works at Oughtibridge, he opened others in Sheffield, but upon the rearrangements of certain partnerships he took his name, capital, and business out of the company, and in 1864 joined a

John Bramall, as Bramall and Bedford, at works in Mowbray Street—the origin of the present extensive premises.

Soon John Bedford was again doing extensive trade with the Continent. Upon the outbreak of the Franco-German War in 1870, he went to France to safeguard his interests, and it is believed that he was the last Englishman to leave Paris before the famous siege, and the first to re-enter it after.

It was the dissolution of this partnership in 1871 which brings into review the fourth generation of Bedfords.

## PUBLIC SERVICE

The mantle of public service fell chiefly on Henry Hall Bedford, the second of John's three sons, who not only succeeded his father as head of the firm, but as chairman of the Royal Infirmary, a position he held until his death in 1930.

Mr. Henry H. Bedford served as Master Cutler, President of the Sheffield Chamber of Commerce, Justice of the Peace, Town Trustee, Governor of the University, and director of the National Provincial Bank Ltd.

Associated with him in the business at this time were his brothers, John George Hawksley Bedford and William James Bedford. In due course the three sons of these three brothers came into the concern to prove worthy representatives of the fifth generation.

The three cousins served with distinction during the 1914-1918 war. Mr. Kenneth Savile Bedford (only son of Mr. J. G. H. Bedford) was killed in action, but Mr. John Bedford (son of Mr. H. H. Bedford) and Mr. Reginald A. Bedford (only son of

Mr. W. J. Bedford), who was gravely wounded in France, were spared to return to carry on the family tradition.

Mr. John Bedford relinquished the position of managing director in 1935, but remained a director.

Mr. Reginald Asline Bedford is now chairman and managing director.

As this year is the bi-centenary of Benjamin Huntsman's revolutionary discovery that steel could be made from iron by liquid melting, it is of interest to note that Mr. Reginald A. Bedford is a direct descendant on the distaff side of Thomas Asline, who financed Huntsman in return for a half partnership (Huntsman and Asline) in the business which first produced crucible steels. Sheffield, with its varied steel industries, undoubtedly owes its growth and fame to Huntsman's discovery.

Thomas Asline Ward (the grandson of Thomas Asline) was in his day and generation an outstanding leader of both the public and social life of Sheffield.

## TRADE FEATURES

So much for personalities in this survey of a century-and-a-half of industrial experiment and progress: the practical side presents equally notable features. From that day in 1871 when the grandfather of the present generation put up the plate "John Bedford & Sons," the firm has never looked back or stood still. It has made history with several of its products, the most notable being in the specialised production of hollow rolled bars (completely distinct from tubes) for all kinds of mining and industrial purposes.

The novel methods evolved have, since the world patent rights expired, become recognised as international standard practice.

The Company has a continued policy of growth and expansion, in accordance with its financial resources, with one view in mind of being self-contained, and in its group of factories, under central control, is now

manufacturing a wide variety of highly specialised steel and steel tools of the finest quality.

The manufactures in its group of factories and departments are all serviced by the Company's rolling mills, tool-making, engineering and electrical sections and metallurgical laboratories, in addition to which the Company has evolved and produced on its own premises a considerable number of varied specialised machines to produce and improve the manufacture of its various products.

Associated with Mr. Reginald A. Bedford and Mr. John Bedford on the Board of Directors are: the Earl of Denbigh, Mr. Frank Stratford (also secretary to the Company), Mr. Arthur Waterhouse, and Mr. David G. Reid.

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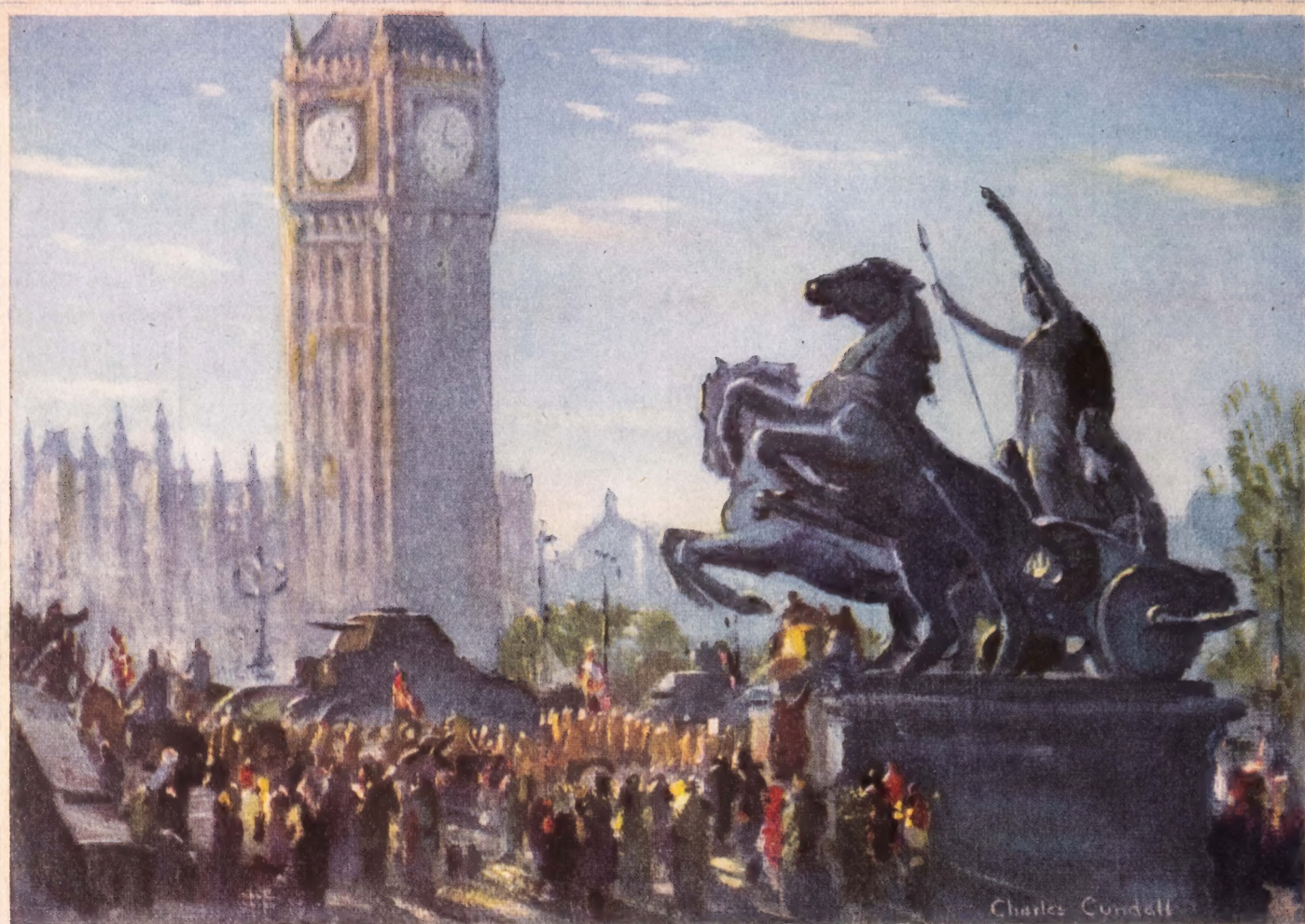
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